

THE
L I G H T
O F
N A T U R E
P U R S U E D.

BY
EDWARD SEARCH, Esq;

VOLUME II. PART I.
T H E O L O G Y.

Τὸ γνωστὸν τῷ Θεῷ φανερόν ἐστιν ἐν αὐτοῖς· ὁ γὰρ
Θεὸς αὐτοῖς ἐφανερώσε. Τὰ γὰρ ἀοράτα αὐτῷ
ἀπὸ κτίσεως κόσμου, τοῖς ποιήμασι νοούμενα κα-
θοράται, ἥτε αἶδι· αὐτῷ δύναμις καὶ δειότης.

ROM. Ch. i. 19, 20.

L O N D O N:

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MDCCLXVIII.

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To which is added, a new and complete
Index to the whole. The second edition
of the first volume, with many new
additions, is also now ready.
Rom. Ch. i. 19, 20.

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MDCCLXXIII.

T H E
L I G H T O F N A T U R E
P U R S U E D.

V O L I I . P A R T I .

C H A P . I .

S U B S T A N C E .

HITHERTO I have proceeded only upon a view of human nature and the things we are daily conversant with, in order to frame some rules for our conduct as well in the prudential management of our powers with regard to our own interests as in joining our mutual endeavours towards promoting those of one another, whereby we may render life more comfortable and happy. But as I proposed in my general introduction to examine the foundations both of Religion and Morality, the Reader may think himself disappointed in that, after having attended me through so large a portion of my work, he finds me

amusing him with one of them alone without mentioning a single word of the other, and that in such manner as to leave it grossly defective at the conclusion. I am now going to satisfy him in this particular, by which, if pursued with tolerable success, he may expect I shall be able to restore morality to that completion whereof he thinks I have defrauded her.

Let us now therefore enter upon a careful examination of what other principles may be found besides those we have already collected and push our researches beyond the scene exhibited by our senses and our experience. And as this attempt will lead us to take a view of external nature and things invisible or which can be discovered only by the eye of reason we shall have an ample field to expatiate in, distant objects and extensive prospects to contemplate, no less than universal Nature comprehending things visible and invisible with the connections and dependencies running between them, so far as the feeble optics of human understanding can reach to discern them. In the progress of this task I must learn to handle the telescope, the vastness of whose scenes may demand as close an attention to view them distinctly as our minute observations of the microscope have done before. For the objects we are
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ordinarily conversant amongst lie within a certain compass of magnitude: whatever greatly exceeds or greatly falls short of the sizes familiar to our acquaintance carries a strangeness and unwieldiness forbidding and irksome to those who read for amusement only. The description of them must not be read but studied, and the describer can do no more than strive to make the study as little laborious as possible. But I cannot yet consent totally to lay aside the microscope, for I pretend to no extraordinary illumination nor direct intuition of things invisible, but can hope only to investigate them by the things that are seen: therefore it behoves me to attend still for a while to minute objects, being desirous to lay the remainder of my foundation with the same exactness I have endeavoured at before.

2. But before we enter upon a view of external nature or proceed to investigate causes from their effects in order to discover what powers or what laws there may be to govern the invisible world it will be proper to consider whether we are likely to have any concern in their operation. For as Epicurus rightly observed that what shall happen after we cease to exist is nothing to us, it will be superfluous to enquire into the sources of enjoyment or suffering in future times until we

have satisfied ourselves that we shall stand in a capacity of being affected by them. Nothing is more certain than that this bodily frame of ours shall be dissolved in a few years; we daily see instances of its mouldering into dust or putrefying into corruption so that we cannot flatter ourselves with its having a long continuance: but it has been made appear in our survey of human nature that the body serves only as a channel of conveyance to the mind which is properly ourselves as being our sentient principle which perceives whatever is perceived by us, acts all that we do, and receives notices from external objects through the corporeal organs. So that our capacity of good and evil to come must depend upon the durableness of the mind: concerning which we can know nothing from sense or experience, for they inform us not what becomes of the mind upon dissolution of the body, we do not see it moulder and putrefy like that, yet neither do we see it give any signs of life or existence; nor can we learn anything from the testimony of others concerning the inhabitants of that country from whose bourne no traveller returns. Therefore we must endeavour to gather by deduction of reasoning from such observations as experience has afforded us what is the constitution of the mind and whether

whether it be of a lasting or a perishable nature. I do not forget that we are taught to believe a resurrection of the body, and that some have maintained that the mind, altho' naturally perishable, may be preserved in Being by the agency of a superior power. I would not be thought to reject either of those opinions but it is obvious that the consideration of them cannot fall within the compass of my present plan: for none ever attempted to show by the meer light of reason either that the body shall rise again or that the mind, if corruptible in itself, shall be continued longer than the term assigned her by nature. Wherefore the nature of the mind is the thing to be enquired into: and all who have examined this point seem agreed to resolve it into another, namely, whether the mind be a compound made up out of several materials, or a pure simple substance without parts or mixture.

For it was admitted on all hands that whatever was generated may be corrupted; the productions of nature being only so many various assortments of matter mixed together by the mutual action of the elements upon one another, as that action never ceases to operate it must of course destroy what itself had produced: so that the forms of bodies whereon their essence depends continually change and

fluctuate ; what is one thing to day becoming another to morrow and a quite different the day after. Those therefore who would shorten our existence to the period of human life proceeded upon a supposition that the finer parts of the elements united properly together in a certain organized structure might produce an animal endowed with life, sense and motion, that the degree of sense depended upon the greater or lesser nicety of this organization, and that thought and reason could not subsist out of the human form. So they held that the mind itself was nothing else beside a curious assortment of elementary particles ranged together after a particular manner, or a harmony resulting from the nice order and mutual congruity wherein they were disposed. This being laid down it would follow incontestably that the laws of nature which have brought those elements into the order wherein they stand may as easily separate them again and divest them of that sense and reason they had acquired by their contexture : in which case the mind must be destroyed upon dissolution of the body, nor can the harmony subsist after the strings that gave the notes composing it are broken asunder. From whence they justly inferred that the end of life must be the end of Being, and that we can have no concern
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with anything that shall happen after our decease.

3. Those on the other hand who would extend our duration beyond the present state generally set out with showing the absurdity of imagining that any combination of senseless matter could produce sense and reason, which must be primary qualities belonging essentially to the subject wherein they are found and not resulting from any others. They insist that Mind is a kind of fifth element, different from the other four, not producible out of them, and totally dissimilar from that first matter, whether water or fire or atoms or whatever else can be supposed, whereout the elements themselves originally sprung: that being no production of nature it is not destructible by any law or power of hers: that when united to body it does not inhere therein as an accident or modification but is joined thereto as a distinct substance and may be separated again without losing its existence. They conceive that upon such separation it may perform its proper functions better and freer than while encumbered with flesh: or if it should become incapable of exercising its powers it will nevertheless retain the powers themselves and continue capable of being united to another organization which may prove equally fitting
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for its purposes with that it now inhabits. From whence they as justly infer that death is not an end of Being, but at most only a suspension of sense; therefore it behoves us to carry our thoughts beyond this present state to what shall happen hereafter, as being matters wherein we ourselves may have an actual concern.

4. This question then concerning the simple or compounded nature of the mind I am to begin with: but before entering upon the discussion I conceive there is something to be done preparatory thereto for ascertaining the terms we must employ, without which we cannot proceed with exactness in our reasonings: and as our ideas of compounding seem a little variable and undetermined I shall begin with endeavouring to settle what is to be understood by the terms Composition and Substance.

5. I have met with people who pretend they have no idea of substance because they cannot comprehend a naked substance divested of all its accidents: they want to see one taken out from its qualities and laid upon a table for them to push about and examine, like the spring of a watch taken out from the work. But this is a most unreasonable expectation, for though I see no impossibility there may be a substance devoid of
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of all qualities whatsoever, it is not at all probable there should, because it could be of no use either to itself or anything else: yet if there were any such we could never know it, for substances discover themselves to us only by their qualities, and those qualities are as irrefragable an evidence of their existence as we could have were we able to discern them without. What we term qualities, as Mr. Locke observes, are powers of affecting us, or of causing alterations in other substances making them affect us differently from what they did before: thus whiteness in snow is the power of affecting us with the sensation of white, heat in fire is the power of affecting us with the sensation of warmth, and of melting wax whereby it is made to exhibit another appearance than it did while cool and hard. But an act of power is the operation of some agent, of which therefore it gives as full evidence as of the power thereto belonging; for there cannot be power with nothing to exert it. So that naked quality is no more comprehensible than naked substance, and you might as well undertake to lay a substance devoid of quality upon the table as to lay whiteness, squareness, softness, coolness without laying something white or square or soft or cool: now if this assertion be intelligible, as I presume it is,

is, you must have an idea of every term employed in it and consequently of the word *Something*, if there be a meaning in the word you may take that for your idea of substance.

6. But the quality that most commonly gives us evidence of substance is solidity or tangibility, therefore the vulgar do not count those things substantial which they cannot feel compact in their hands, such as froth, vapour, smoke, light, odours or the like: and they frequently conceive a production of substance, as in the growth of plants; or the destruction of it, as in burning wood or evaporating water over a fire. But those who use ever so little reflection know that our senses cannot in any manner be affected without an agent to operate upon their organs: we cannot see light without something striking upon our eyes, nor smell an odour without something entering our nostrils; we cannot perceive a smoke or vapour unless there be something floating about in the air to obscure it, nor discern the colours in a bubble unless there be something capable of refracting the light. They know likewise that our discernment of things, though an evidence of their being, is not an evidence that they began to be just when we discerned them: nor is the loss of that discernment an
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evidence of their ceasing to be, but only of their removing beyond the reach of our senses. If I find my table dusty I shall not think the dust a new production, but that it was flying about in the air before I perceived it and is now only gathered into a thickness to make it visible: and if on my return after going out of the room I find the table clean I shall not suppose the dust absolutely destroyed, but only swept away somewhere out of my sight. So when I see a tree which I remember to have been a slender twig there is no need I should imagine the great accession of substance a new production, but drawn from the earth, the air or the clouds wherein it lay dispersed and undistinguished: and when the tree is cut down and consumed in the fire there is no occasion I should believe it reduced to the little substance of ashes left behind, but that the rest is dissipated in imperceptible portions in the same manner as before their coming into the tree. Yet when substances by their minute divisions are withdrawn from our observation we still apprehend them possessing qualities had we senses acute enough to be affected by them: for we are ready to think that we could feel the smallest particles if we had fingers fine enough to take them up, and that if one were pressed ever so strongly on each side by two

two others of equal bulk it would keep them from coming into contact. Thus some qualities, especially those of resistance and solidity, seem to be inseparable companions of the substances we are ordinarily conversant with or exercise our thoughts upon: and all qualities, during their continuance, are inseparable from the substances whereto they belong nor can be removed from them without their being lost, for if you rub over a piece of paper with ink the whiteness is not banished into another quarter but is absolutely destroyed.

7. This necessary connection of qualities with some substance makes them an evidence to us of its existence, for if there could possibly be whiteness without an object to exhibit it I could not conclude from seeing a whiteness that there is something white lying before me. This likewise may convince us that existence belongs solely to substance, quality having none of its own, being no more than a particular mode of existence in whatever possesses it. Not but that quality has a reality concerning which we are liable to mistake, for a child on seeing an evening mist rise out of a pond may take it for smoke and think the water must be hot: but what else is this than an apprehension that the water is so conditioned as that it will scald him

him upon putting in his finger, whereas in reality the condition of the water is otherwise and would feel cold to the touch; so that the existence of coldness is nothing else than the water being in such a state as might affect our flesh with a sensation of cold upon being put into it. I am not unapprized that Plato supposed qualities might subsist without any substance to possess them because while we can form an idea of them they may have a reality in our thoughts: but I beg leave to observe that our idea of a thing is not the thing itself, for one may remain after the other ceases and may subsist though the other never had a Being. I know well enough what the tooth-ach is though now quite free from it; I remember the transactions of yesterday but the occurrences themselves are clean gone and over; I have a clear idea of a Cyclops, a Centaur, a Chimera, yet without believing there ever were such things in nature. Nor do I find other people backward in denying the reality of qualities they conceive readily enough: some in their melancholy moods when put out of humour by egregious impositions will insist there is no such thing as honesty in the world, they do not mean that they have no idea of it, but in their notion of its reality they refer to some substances possessing it, and you must understand them saying

saying there is no man who possesses a principle of perfect honesty. Besides that the reality of a quality in one subject is not preserved by its remaining in others: the whiteness of this paper does not depend upon the whiteness of that but would continue the same though there were nothing else white in the world besides; and if I blot it over the whiteness of that particular paper is utterly gone out of all reality though I should have ever so many sheets in my closet still unsoiled and should remember ever so well how it looked before I spoiled it.

8. From hence it appears that identity carries another meaning when applied to substance than what it does when applied to quality, in the latter being nominal only not real: for though we currently say that two sheets of paper have the same whiteness yet upon colouring one the whiteness of that is absolutely destroyed, the other remaining still unhurt, but it is absurd to suppose the same thing can subsist and be destroyed at the same instant. Nevertheless our uses deriving from the qualities of things it concerns us chiefly to take notice of qualities; for which reason whatever continues to serve our uses in the same manner we denominate the same thing notwithstanding any change of substance there may have been in it. Thus we count a river the
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same although perpetually changing its waters provided those waters be equally fit for our services in swimming or rowing or washing or drinking. Here it is easy to see that the identity of form only in the river continues all along, the substance every moment varying : as on the other hand if you mould a piece of wax with your fingers it may become sometimes round, sometimes square, sometimes triangular according as you fashion it, the wax being still the same. Therefore there is a formal or specific and there is a substantial identity, the former when several substances stand so conditioned as to affect us exactly in the same manner, the other when we are satisfied the substance remains the same whether appearing under the same or various forms. Specific identity is a branch of the formal, being of those qualities which constitute its essence, adapt it for some particular uses and gain it a particular name : thus the wax while moulding into different figures still is wax, but if laid long in a damp place where it loses its outline the essence of wax is gone and it becomes dirt or some other kind of thing, yet substantially the same it was before. As we can know substances only by their qualities if we have a dozen eggs in all respects similar which we would distinguish apart it is common to

mark them with No. 1, 2, 3, &c. in order to know them again severally after being taken out of our sight: for this reason I suppose substantial is often called numerical identity as a synonymous term. Substantial or numerical identity cannot be lost though we may not know where to find it, for one substance cannot be changed into another but must always continue the same it ever was, it can only succeed in the room of another or assume its form upon that being removed to some other place: and though qualities be so far unchangeable as that squareness can never be roundness, yet are they perishable and producible; for when the wax is new moulded the squareness it had is totally lost, not flown off to some other quarter, and the roundness substituted in its place is a new production not drawn from any fund where it had lain concealed before.

9. As to the unity of substances, that is not easy to be ascertained for want of acuteness in our faculties which require numbers of them to affect us in any manner, for frequent experiments assure us that all the objects we discern are composed of substances numerically distinct from each other which when separated are singly too feeble to touch any of our senses; we cannot see them nor feel them nor count their numbers but are
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perpetually perplexing ourselves with subtle questions concerning their infinitude. But tho' we cannot tell what is one we may know what is many, for whenever we perceive distinguishable parts in an object we may rest assured it contains as many substances as there are parts we can distinguish. If I have a gallon of wheat before me I may pronounce that the gallon consists of so many substances as there are grains in the vessel though I cannot restrain them to that number because not knowing how many dusts of flour or particles of bran, all of them distinct substances, lie in each grain: and if I pitch upon some particular grain and then shake the vessel I may still remain satisfied that my grain is somewhere among the rest, numerically the same as when I took notice of it and not changed into any other, though I cannot now find it again. Or suppose the wheat sent to mill, the flour kneaded into dough, then baked into bread, and the bran all employed to stuff pin cushions: I cannot doubt that the substance of my grain, although altered in form and dispersed indiscriminately among that of the other corn, still subsists undiminished in the meal, the bread and the cushions, and that all together contain at least the same number of substances as there were grains in the gallon besides an accession

of others in the water, the yeast, and filk coverings to hold the bran. And as the corns in the gallon and particles of flour or bran in the corns have each a distinct Being and existence of their own independent on the rest and which receives no increase by their junction, hence it seems to follow that the gallon has no other existence than that of the corns, and the corns none other than that of the flour and bran composing them; that nature has made all things in individuals, and though we cannot tell whether what we commonly term so consists of finite or infinite parts, yet that it must derive its existence originally from single substances how many soever there be that enter into it.

10. I have observed before that though qualities are our sole evidence of the substances possessing them yet we do not imagine the substance destroyed upon losing its qualities: in like manner though the operations of qualities upon ourselves or upon other substances when we can perceive them are our sole evidence of their reality, yet we apprehend the qualities more permanent than their operations and not lost when they cease: for if I take a snow ball into my hand I shall be satisfied of its coldness by my sensation but if I throw it out upon the grass where I no more feel it cold nor perceive its effects upon
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any thing else nevertheless I shall still remain persuaded it retains the quality of coldness ; but if I put it into a saucepan over the fire it will lose its specific essence, being turned into water, and may exchange its quality of freezing for that of scalding. Hence it appears there are qualities which a substance may assume or lay aside according to the texture and position of its component substances or motions among them, and these we term secondary qualities : others which we conceive inseparable from all substances falling under the observation of our senses, whether single or in junction with others, such as solidity, impulse and mobility, and these are called primary qualities. Which primary qualities are a necessary foundation of the others, for without solidity a knife could not have the quality of sharpness to force its way into whatever we employ it to cut ; without motion and impulse the lucid darts of day light, as Lucretius calls them, could not affect our optics with colours ; nor could bodies discover to us their figures without resistance to our touch or force to throw off the light in a particular manner upon our eyes.

C H A P. II.

COMPOUND SUBSTANCES.

WHOEVER will consider the idea of Composition a little attentively must perceive it to be a particular manner of juxtaposition, and to contain several species under it, as joining, co-alescing, mixing, incorporating and the like. But every bringing of things together does not form them into a compound : if I bespeak a table of Hatchet the carpenter which I will needs have him make up in my presence, he prepares the materials at home and brings them all together in a hand basket, but I do not conceive them in that position to be anything until he has joined the several parts properly to one another, and then I look upon the boards, the legs, the hinges, the screws, the glue and whatever else he has put among them as one thing, which I call a table. So when the cook brings out her flour, her sewet, her sugar, her raisins, they still are but what they were before though laid ever so close upon the dresser ; nor do we even then consider them as single things but call them heaps or parcels, which are nouns of multitude,

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until she has mingled them well into one mass which then becomes a pudding.

2. In like manner nature forms her productions out of materials collected from the elements but with this difference, that as she works in a finer manner than art can imitate we seldom know the ingredients she uses until they appear in the composition. Thus the particles constituting a plant could not be distinguished whilst they lay mingled in the mould the water or the air, nor do we perceive the sources at all diminished from whence they were drawn, wherefore we are vulgarly apt to regard them as new Beings not framed out of any others. Sometimes indeed we may know partly what are the ingredients employed, as when a farmer enriches his ground with manure; but then the manure must be divided by putrefaction into imperceptible parts before it be fit for nature to work upon. Nevertheless it is universally agreed by all men of thought and consideration that the substance of every thing we see produced was existing before, and is only brought together into that form and order which renders it the object of our notice.

3. Nor does the mind want a power of compounding things that nature has not joined, or of making arbitrary junctures for

which she has given no foundation ; as a flock of sheep, a nation of men, a parish or a bay. For the sheep of a flock or men of a nation have no more natural connexion with one another than with those of any other drove or country, the lands of a parish lie as closely contiguous to those of the next as they do to any lands of the same, and the waters of a bay are as much mingled among the waters of the ocean as they are with one another : yet we consider each of them as one thing and call them by names of the singular number.

4. Thus we see compounds produced three ways by nature, by the hand of man and by the imagination ; and all three proceed in the same manner, to wit, by selecting materials from the funds where they are to be had and placing them together so as to strike our observation as one object. Nevertheless they proceed differently in this respect, that the two former make a real change of position in the things they compound, whereas imagination can work only upon its own ideas throwing them into a particular order or combination without actually removing anything from its place. But all composition whether actual or mental bears a reference to the thought, for the essence of things depends upon the uses we have for them, the properties

ties we observe in them, or the manner wherein they affect our senses: therefore we conceive them to remain the same so long as they continue to exhibit the same appearances how much soever the component parts may be shifted: thus we esteem the Thames the same river we saw last year altho' the waters of it have been changed a thousand times. Nor do we consider every thing as entering into a compound if it does not answer our purpose so to do, altho' joined as closely as those we call constituent parts: if while Hatchet makes up the table he carelessly drops a spoonfull of glue which fastens a chip to it; or if while our backs are turned an unlucky boy screws a piece of deal upon one of the leaves, we do not reckon the chip or the deal a part of the table. So neither do we esteem an oak apple as part of the tree but an excrescence, altho' adhering as firmly to the leaves as they do to the branches. We say oyl will not incorporate with vinegar because after shaking them ever so long we can still distinguish them floating amongst one another: but water, arrack, orange juice and sugar compose punch, which we reckon a new production because it affects our senses with a taste and appearance the several ingredients had not before. The blood, humours and fat in our bodies seem to enter into the
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composition of them, but not the breath in our lungs nor victuals in our stomachs; because we perceive these continually coming and going, but we do not see when the others fly off or are renewed. Nature unites nothing, not even the strongest of her works, any otherwise than by holding the parts of them firmly together. It is now I think generally agreed among the learned that that quality of bodies called the attraction of cohesion, which keeps them united, is the effect of a certain subtile fluid pressing strongly against them on the outside: so that if a carpenter setting an upright post to support a floor, upon finding it too short should drive in a plank between, the post, the plank and the beam above, although manifestly distinct from one another, would be as truly united as the parts of iron, marble or other the most compact and durable substances.

5. But it seems this subtile fluid, which makes the particles of matter cohere so firmly when pressing them on the outsides, if it can get between them, rends them as forcibly asunder, whence proceeds their elasticity; so that the heaviest bodies, upon having their parts dissipated beyond their sphere of attraction may become the lightest: and Sir Isaac Newton supposes air itself generated this way out of metals and minerals. Thus all pro-
duction

duction is no more than an assortment of minute bodies, imperceptible before, in such manner as to render them discernible; or else throwing them into new forms from whence shall result qualities they had not in their former state: and all destruction no more than a dissipating of them again, or else such a change of their contexture as shall divest them of the qualities they had by their first union. And it depends upon our customary manner of conception and the use of language to determine what shall be deemed a change of one thing into another or only a circumstantial change of quality in the same thing. Cream beaten into a certain consistency by churning produces butter, but upon the same consistency being destroyed by melting it continues butter still, unless the careless cook, thinking of her sweetheart, should let the saucepan stand over the fire, for then we say it is turned into oyl. So butter kept to be four still retains its essence; but dough grown sour makes leaven, and well baked becomes bread, though raw beef well roasted is nothing more than beef as it was before. What is it forms the stars into constellations besides the consent of astronomers? and that upon an apparent only without a real juxta position; for the stars of each constellation lie at immense distances from

from one another, and probably some of Aries may stand further apart from others of the same sign than they do from those of Libra in the opposite hemisphere.

6. The more closely we consider the nature of compounds the more fully shall we be convinced that howmuchsoever they may change and vary there is nothing new in them beside their order and situation and the properties arising therefrom; and that they are nothing but collections or numbers of things brought together so as to affect us in a different manner from what they did when separate, or joined into one idea by the arbitrary power of imagination. It is this collectiveness of compounds that enables us to divide them and furnishes us with the idea of Whole and Parts, which being relative terms cannot subsist without their correlatives: for nothing is a whole unless as it contains all the members necessary to complete it, and nothing a part unless in reference to other parts among which it is to be numbered. Every compound must have some quantity, and all quantity may be expressed by numbers, which alone renders it divisible; for nothing beside numbers is capable of being divided, but they being combinations of one another and ultimately of units, may either in fact or thought be separated

rated into them again. But what perplexes this matter is that arithmeticians understand by dividing a separating into equal parts: but there may be an unequal as well as an equal division, twenty may be parted into nine and eleven as easily as into two tens, or into three, four, six and seven as into four fives; and in this sense there is no number indivisible until you come to unit, lower than which you cannot go, for One cannot be divided. I know we often proceed to fractions supposed to express less than unit, but in this notion we impose upon ourselves by shifting our ideas and considering that as a multitude which before we considered as one; therefore we cannot make a fraction without multiplying first before we divide. He that would part a sum of money into several shares proceeds first to see how many pounds belong to each, if there be a remainder he multiplies it by twenty to find the shillings he shall allot beside, and so on to pence and farthings; if there still be a remainder and he would be very exact, having no denomination of money to reduce into, he makes an arbitrary coinage in his own mind and supposes his farthings to contain so many pieces as there are shares into which he would distribute them, which he sets down for the denomination of his fraction: so a farthing
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with him is no more a unit than a pound was at first, nor is seven thirteenths of a farthing less than a unit any more than three pence or seven shillings, which everybody will allow to be whole numbers.

7. Hence and from what has been said in the last chapter may be gathered that composition works a different effect upon qualities from what it can do upon substances: for quality having no existence of its own but being a particular manner of existing in substances, it is easy to conceive how the manner will vary according to their various coalitions and that they may acquire powers of affecting us which they had not while single, which will then be new productions having no reality before. This experience testifies, for things invisible when separate may become objects of sight by being brought together in numbers: the vapours in a clear sky we see nothing of, but when condensed into clouds we discern them plainly enough; if you bring up a bottle of wine out of a cool vault in a hot day, tho' the air appear clear you will quickly perceive a dew gather upon the glass. Qualities mingled together may generate a new quality different from all its constituents: blue and yellow will make a green: all the variety of colours we behold are supposed to be only various combinations of the seven
primary

primary, yet you cannot possibly tell which of them nor in what proportion go to form a brown : whiteness has been demonstrated to arise from the joint action of all the seven operating equally upon you, yet the idea of white contains nothing of other colours as component parts. Position likewise will give substances a form which they had not singly ; I may place a number of shillings so as to make a square, the shillings themselves still continuing round ; here then squareness has a reality in the number and roundness in the several pieces : so there is no absurdity in a compound having forms and qualities of which the component members are destitute. But this holds good only with respect to secondary qualities which are producible and perishable, as the primary are not ; for a solid body cannot be made up of unsolid materials nor a movable body of those that are incapable of motion. Therefore forms, qualities and essences are producible by composition, destructible by dissolution, and interchangeable among one another by the various stationing of the materials composing them : but with substances the case is otherwise, for however dispersed, or gathered together or however variously placed among one another they continue always numerically the same without encrease or diminution of their numbers

bers or of their quantity, without transubstantiation of any particular one into any other that was not of their number before. A pint of water is the same quantity whether lying in a basin or evaporated in steam, and if there were five millions of particles in the vessel there are still the same identical five millions floating about in the air: it is not now water but still is substance, having lost its essence but not its existence. Or if you suppose each aqueous particle to consist of infinite parts which might than be separated to infinite distances, yet in their dispersion they would be the same quantity and number of substances, be it finite or be it infinite, as while collected in the particle: for it is inconceivable that nature can ever lessen or add to the number of substances she has already in store, she can do no more with them than congregate or dissipate or assort them variously by changing their positions with respect to one another. But our business in common life lies solely with the qualities of things, not their substance, for so we find them convenient for our purposes we need not care what substance or particular materials they are composed of. If a vintner gives me the taste of wine from a particular pipe in his vaults which I like, I may perhaps desire to have a parcel out of that very pipe, because
doubtfull

doubtfull whether any of the others might please me so well: but if I could be assured he would send me wine of exactly the same quality and palatableness I should not be solicitous to have it drawn out of that or a different vessel.

8. For this reason we ordinarily denominate things the same or different according to their appearances or aptness for our purpose, and when we give them those epithets we oftener mean specifically than numerically the same or different. Thus if I order my merchant to send me the same wine I had last spring I can expect only wine conditioned alike, for I must know it is impossible he should send the very wine I have already drank out. Or should I bespeak a box of the joiner which on coming home appears not shaped according to my orders I may be apt to say, this is not the thing I wanted: if he carries it back and afterwards brings me one exactly answerable to my intentions I shall be content with it as being the very thing I would have, yet without regarding whether he had made it up of the same materials with the former reframed or of fresh stuff, and if he tells me I shall not alter my opinion thereupon. Therefore it is very material for having a just idea of identity and composition to observe whether when we

use the word Same we understand thereby the same thing or the same sort of thing: in the case before mentioned of sending the same wine it is plainly to be understood wine of the same kind, and when I say of the ill-contrived box it is not the thing I wanted my meaning must be that it is not such a sort of box as will suit my purpose, for had it been constructed and worked to my mind I should have been equally satisfied whatever pieces of deal or wainscot it had been made of. Cream churned into butter is still the same thing it was before, but a different kind of thing and applicable to different uses: the human body is certainly a different thing in a full grown man from what it was in the new born infant, yet is counted all along the same body because conveying sensations and serving for an instrument of action to the same person. But the common language of mankind, adapted to the common occasions of life, which require our attention to the kinds, the qualities and uses of things, leads us perpetually to mistake essence for existence, specific for substantial identity, and the manner of being for Being itself. Hence we look upon the production of a compound as a creation, and the change of a substance from one species into another as a transubstantiation for when a millwright has set up a
wind

windmill we suppose there is a new thing, a new Being, produced because there is a new kind of thing having properties wanting before, for now it will turn with the wind and grind our corn, which the disjointed materials could not do: and upon salt being thrown into water we think the salt has utterly lost its Being and a new substance produced which we call brine. Whereas anybody with a little reflection may see that the materials of the windmill retain the same existence when put together as while separate, making only a more serviceable kind of thing than while lying in confusion: and that the brine contains no more nor other substance than was in the water and salt when kept apart. So that all the operations of nature and art which have been performed in the preceeding year have neither added to the number of substances, be they finite or infinite, which were in being a twelvemonth ago nor diminished nor changed them, but only cast them into various kinds exhibiting different appearances and diversity answering our uses.

9. From all that has been observed above I think it must appear manifest that existence belongs only to individuals, that whatever has a Being of its own cannot be divided, and that a compound is no substance other-

wise than to our apprehension, but an aggregate of so many substances as the component parts whereof it consists. This will be seen plainer if we consider the incorporations made by men: if our sovereign lord the King embodies six hundred men into a regiment to be called the royal volunteers, the regiment taken collectively is no real Being but a creature of the imagination: I do not mean to call it a meer shadow, for the brave fellows composing it have a real existence and I doubt not will prove themselves effective substances in the day of trial, but the body has no other existence than what belongs to the men; if it had there would be a power of creation by human management, for then upon the incorporation there must be six hundred and one Beings instead of only six hundred there were before. In like manner the productions of nature, which are only collections of imperceptible particles into a perceptible form, add nothing to the number of Beings, nor does anything properly deserve that appellation unless what is uncompounded and indivisible.

C H A P. III.

DIVISIBILITY OF MATTER.

BUT an objection may be thought to arise against the sole claim of individuals to existence from the divisibility of matter, which according to the fashion at present prevailing among the learned is held to be absolutely infinite. For it may be urged that if all body consists of parts, those again of under parts, and so on for ever, we must either suppose with Dr. Berkeley that the bodies we daily see and handle are meer phantoms and ideas of the mind, or if we allow them a real existence, we must needs rest it at last upon something which is itself a compound, because after infinite divisions we can no where find anything which is not so. But it must be granted that infinite divisibility as well as finite has its difficulties which I believe are gotten over principally by the definition generally given to matter of an extended substance. If you ask what is meant by the term extended they tell you it is the having parts without parts, that is, extraneous to one another. Now for understanding this explanation we must

observe that appearances or ideas may have parts within parts coextensive together throughout the whole compound; thus our idea of a piece of gold contains the ideas of weight, compactness, ductility, fusibility, with many others as parts thereof, and each of these is diffused equally through the whole piece: but when we consider its bulk and substance the right side does not reach into the left nor is the top diffused among the bottom, so that the substantial parts do not lie within one another but each has its separate station. Thus to say that matter is divisible because extended amounts to no more than saying it is so because it consists of parts distinct and removable from one another: a pretty way of proving the point, being no better than the ladies reason, it is divisible because it is.

2. It seems a more colourable argument when our conception is appealed to and we are desired to imagine any particle which must not at least have two sides distinct and distinguishable from one another. I may perhaps by and by accept the challenge and attempt to show that we do not always conceive of things as having two sides: but for the present let us see what can be concluded from this argument supposing the premises assumed in support of it were true. It has been shown
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by Mr. Locke and in our chapter on Reflection that our ideas concerning external objects are originally derived from sensation, all we can do for ourselves is by repeating, compounding, associating, dividing or extracting from what we have received by that channel. Nor is it certain we can form any conception of magnitude greater or less than what we have seen: we talk indeed currently of immense spaces, of millions of miles, of vortices and planetary systems; but our imagination keeps all the while within the same compass it would do if we were to contemplate any measurable portion of ground we could distinguish with our eyes. We proceed in the same manner a person would who should undertake to draw any plan assigned him upon a slate: if he be set to describe a garden, he marks the walks, the beds, the groves, the buildings, in their proper dimensions so as that the whole may just fill up the space he has to delineate them upon; if a county, then spacious roads and wide rivers run in the place of walks, and you find towns occupy the spots where there stood alcoves before; if the terraqueous globe, the parishes are lost thro' their minuteness and their room is taken up by mountains, kingdoms, seas and oceans; if the solar system, he places a little ball in the middle to represent the Sun,

draws the planets with their satellites rolling round at proper distances, and makes the orbit of Saturn touch the edges of his slate: thus when he is put to take in a larger space he does not enlarge his draught but contracts his scale and lessens his figures to bring them within the limits to which he is confined. Just so it fares with imagination whose scenes contain the same dimensions whether we contemplate larger spaces or smaller: we fancy ourselves climbing to immense heights, but in reality contract our objects to a conceivable size and draw down immeasurable distances within the length of our own line: like Prior's squirrel in the tinman's shop, who seemed continually mounting up in his rolling cage, but never advanced one step higher beyond his own length.

3. Let us now invert the glass and turn our thoughts upon objects less than what ordinarily fall under our observation. He that would cut a hair as small as possible may work a good while with a case knife by drawing the pieces doubled along the edge; when he has reduced them so small that they will not double he may lay them upon a smooth table and cut a little longer with a penknife; after he has done what he can this way he may take a microscope and by help of that make two or three cuts more with a fine
lancet:

lancet : there is now no more room for manual operation but if he will proceed further he must go to work with his imagination ; which may chance to play him a fly trick he is not aware of ; for upon contemplating one of the little particles of his last division he will find it grow into a magnitude having two distinguishable sides which he can easily conceive separated from one another, but upon their separation each will immediately grow again into the former size ; and thus he may go on without end until he be tired of the sport. Hence it appears that our imagination is hemmed in by certain boundaries on both sides beyond which it cannot pass, nor can we conceive things greater or less than certain dimensions unless by diminishing or magnifying them we can bring them to a size discernible by our senses ; and that when we attempt an infinite division we proceed without making any way, undoing as fast as we work, and only dividing what we had magnified ourselves : just as was shown before in the case of numbers, where we make a fraction supposed less than a unit by the process of multiplication, how much soever we may fancy it dividing. Wherefore this argument drawn from our want of conception seems inconclusive, it may convince us of a failure in our faculties but proves nothing concerning the nature

nature and constitution of matter : for since there is a certain measure below which we cannot form an idea since experience and reason assure us there are particles far within that measure, how know we what we might conceive had we faculties piercing enough to discern them clearly ?

4. Mathematicians tell us that points disposed in a row form a line, that lines placed side by side make a superficies, and that a number of superficies laid over one another compose a solid. Let us try to analyze a solid into its constituent parts : we cannot by any contrivance actually take off a superficies without thickness ; if we go to work with our imagination, after having detached the surface from the main body we shall find it have an upper and an under side ; endeavour to split these sides asunder and suddenly you will find each of them by a kind of magic provided with a lining. The fault then lies in the imagination which cannot perform what is desired of her for making the experiment ; for those who hold the divisibility of matter surely must allow that every part may be separated from every other, but in all solids there must be some parts lying uppermost ; we only desire you to take of these and not meddle with anything else, but this it seems you cannot do, for you cannot separate

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rate them without tearing up others clinging underneath. Thus our solids resemble a quantity of fine paper piled up in a stationer's shop, if you set a man with gloves on or a rustic whose hands are hard by labour to take off a single sheet, he will fumble about a long while and at last take up two or three together: so if we attempt to take off a superficies we cannot do our work neatly, but our clumsy fisted imagination pulls up another adhering to it beneath.

5. Having so little success with superficies considered by themselves let us try what can be done with them in their state of junction with the main body. When one thing lies upon another, how porous soever we may imagine them, there must be some solid parts of each which touch, and those who contend that all body has magnitude must admit that these parts have superficies by which they rest upon others of equal size that support them. But not to perplex ourselves with such minute parts, since we are enquiring only into our conceptions rather than the reality of things let us consider larger objects that we can easily comprehend: it is certain we may and do conceive of compact substances as of perfect solids and therefore these will answer our present purpose as well as if they were truly such. Let us suppose then a six inch
cube

cube of glass perfectly smooth standing upon a well polished marble table, here we may conceive a superficies of six inches square that touches a like superficies of the table: but what does it touch? is it not real body? and must not that body be void of thickness? for none ever imagined that bodies could penetrate at all into one another. If you say this body must have an under side, that cannot be, for the under side will be a distinct thing from the body, one being touched by the glass and the other not, but the same thing cannot be touched and not touched at the same time. But this same individual body, individual I mean in depth, which touches the glass, must likewise touch some part of the table below, or else it would fall lower until it did: if you say again it touches only by the under side then you make it a compound consisting of two parts, the uppermost of which touches the glass and nothing else and so has nothing to sustain its weight with the weight of the cube above; and the undermost touches the rest of the table but nothing else, and so has nothing that it can support nor any weight resting upon it. Wherefore there must be a number of superficies each whereof touches both the next above and the next below, and run on in continuity to make the thickness of the table.

Now

Now consider the surface covered by the cube as joining to the rest of the table's surface, that part which it touches on the right hand for instance you must acknowledge to be a body, and as it cannot be diffused or penetrate thereinto, what it touches must be a line without breadth or thickness. Consider again what this line touches of the further and hither parts of the table and we shall find them to be points, that is, bodies destitute of any dimension.

6. Some have questioned whether magnitude be really inherent in bodies or only an idea wherewith they affect us: I don't know how this matter can be determined with absolute certainty, for we can know nothing of bodies unless by our ideas, but if it be real we must suppose it to correspond with our idea, and everything to be predicated of it which may be predicated of that. Now though we must acknowledge that our idea of magnitude consists of parts yet it is not necessary those parts should have a magnitude too; things may affect us with an idea by their united force when they could not do it singly. We know visible objects are compounded of invisible particles: and audible sounds made up of little motions in the air which cannot be heard: the watry vapours dispersed up and down in fair weather affect

affect none of our senses but when condensed into rain we can both see and feel it; a single drop falls silently down, but when multitudes of them pour in showers we hear them patter against the ground: why then may not bulk and thickness be composed of what has neither? One is no number yet all numbers are made up of units, and two of them are enough to compose the lowest: we have observed before that all magnitude may be expressed by numbers, as of yards, inches or fractions of an inch, and indeed is no more than a number of parts undistinguished from each other in the thought. Therefore in things whereof we can perceive the parts singly we reckon by number, as a hundred men, a thousand sheep, twenty guineas; where we cannot, we estimate by measure or magnitude, as a pint of water, a square yard of clay, an ounce of gold. Now we shall see this doctrine confirmed if we attend to the discourses of such as would prove the divisibility of matter, for you will find them always contented with number two to make a dimension: there is no line, say they, so short but must have two ends, no superficies so narrow as to be without two sides and no solid so thin as not to have two surfaces; allow them two extremities and their conception does not boggle at any dimension without

without wanting a middle to compleat the idea. Then again if we take our judgement from the scenes in our imagination: no Body can be infinitely divisible, for infinities are the most inconceivable things we can turn our thought upon, and I defy any man to form a clear conception of an infinite number of parts in a mountain or a province, a planet or a Sun.

7. But before I am entitled to give a challenge I must take care to acquit myself manfully in answering that I accepted a little while ago: let us therefore examine whether it be really true that we have no conception of a body without parts. When we look upon the wainscot of a room where the pannels are painted of a different colour from the stiles and mouldings we do not take the objects we behold for fancies or delusions but for something real and material, yet we conceive of the paint on the pannels as square substances utterly devoid of thickness: it argues nothing to tell me the paint must have some depth and that if I scrape off a little with a penknife I shall perceive a colour still lying behind, for our business is now only with our manner of conception which takes in nothing of the latent colour, nor do we apprehend our eye penetrating at all into the boards or the paint but touching lightly upon
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on the surface. So if I see a carpenter draw a line with his lead pencil, perhaps I might easily discern a space between the sides if I looked for them, but this I do not, so the breadth does not enter into my idea of the line which I conceive as a black substance (for I do not suppose it an apparition) extended only in length. Should I upon hitting my pen against something chance to dash out a few sparkles of ink upon my paper I should see them plainly and apprehend them to be substances, yet might neither discern nor conceive any dimensions they had. What shall we say of the smaller stars? I do not deny them to be immense bodies much larger than this whole earth we inhabit, yet every common man who looks at them in the night conceives them as no more than points, and astronomers tell us that if they were brought a hundred times nearer than they are, we should not find them having any perceivable magnitude. So then whether there be such things as points, lines and surfaces in nature or no, certain it is from experience that we have sensations and ideas of them.

8. Men of thought, like children pulling their playthings to pieces to see what is in the inside, endeavour to separate the objects striking their senses from the rest of the body

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dy whereto they belong in order to turn them round and as it were handle them on all sides in their contemplation ; but in so doing, as has been observed before, there constantly grows something more to what they so take off, reflection adding other ideas out of our own fund to those sensation had exhibited : so that a point, a line, a superficies considered apart is not what it was when lying in the body. Thus they deceive themselves thinking to find dimensions in objects which have none : they do indeed find them in their idea, but then they find only what their own imagination had laid there just before.

9. The like may be said of figure as has been observed concerning magnitude, for the one cannot well subsist without the other, whatever has magnitude must have some figure, and contrarywise : but possibly neither may reside in bodies any otherwise than as qualities of affecting our senses in such a particular manner ; therefore it is hard to say what figure belongs to things so immensely great or extremely small as to baffle all our methods of admeasurement. We are apt indeed to conceive of points and of infinite space as being round and the Stoics confidently assigned that figure to the universe, but then where shall we place the center ? why always in that spot where we happen to

stand ourselves, because we can conceive no otherwise of immensity than by spreading our thoughts to boundless distances on all sides of us : but then this center must move as we move and according to the time when we make our reflection, whether in June or December, will stand a hundred and sixty millions of miles apart from itself. We imagine points round because we can conceive them equidistant from every part of a circle drawn about them which we could not conceive of any other figure lying in the middle ; but then the circle cannot be drawn within the point nor unless at some distance from it. So that our spheres of both sorts are incompleat, the one being a center without a circumference and the other a circumference without any or with a movable center. In short the notion of rotundity in these things seems grounded on the following syllogism. They must have some figure, but they cannot have any other besides roundness, therefore they must have that. The minor we may prove well enough, because in all other figures there must be angles or protuberancies which we may conceive broken off and what remains only will be the point ; and we may conceive the sides between those angles and protuberancies swelled out, therefore the figure before such swelling was not immense. But the

the major we assume without any foundation, our faculties not being sufficiently acute to inform us with certainty whether there may not be bodies or spaces without any figure at all: thus much we may rest satisfied with, that we can neither conceive a sphere consisting of no parts, nor yet how finite parts can make up an infinite compound.

10. Upon the whole matter it seems too hasty a conclusion to pronounce that all body must have magnitude and divisibility because we cannot conceive of it otherwise: for we have produced instances of our seeing and conceiving bodies without sight or conception of their having all or any of the three dimensions required to make a solid; and if we cannot comprehend them apart in our imagination without dimensions why should we presume that imagination is a competent judge in the case? For our ideas being all received originally from sensation, reason has no other materials to work upon besides those furnished by the senses, and the objects striking upon them even when assisted by the best contrivances of art are all undeniably compounds, so that we have no experience of anything else whereon to ground our judgements. But had we senses piercing enough to discern that first matter whereof all bodies are composed how know we what

other appearances that might exhibit different from any we have ever yet beheld? which might enable us to understand what now remains inconceivable. Therefore the argument drawn from our manner of conception, which we must needs own imperfect; is scarce sufficient to overthrow that taken from the existence of body, which you can never come at until you get to something uncompounded: for a compound is not a Being, but a number of Beings, nor has any other existence than what belongs to the component parts. So then we must necessarily either admit individuals or deny all existence to body and suppose it only an idea or phantasm of the brain. And that there are such atoms seems to stand confirmed by the current doctrine of cohesion wherein the strength of beams, bars, long stones and other solid bodies consists enabling them to support heavy weights: for their parts are not held together by any cement or strings but, as Sir Isaac Newton and from him our modern naturalists suppose, by the external pressure of ether. Now let us imagine an iron bar sliced out into a multitude of plates as thin as paper and perfectly smooth: I do not say this can be done by art, but if matter be infinitely divisible the bar is certainly capable of being so divided and its length is actually
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made up of such plates standing upon their edges side by side of one another, and it seems incredible they should be made to cohere so firmly as experience shows they do by a lateral pressure against the two outermost. You might easily hold up a quire of paper by pressing it with your flat hand against the wainscot, the same I suppose you might do with a ream or perhaps two or three only you must shove with both hands and all your might ; but if you had glass plates as finely polished as art could make them to try with instead of paper, and enow of them to reach almost cross the room, you would never be able to prevent the middle ones from slipping through between the rest, especially if you laid a parcel of boxes and trunks over them. Possibly you might contrive by means of strong screws to keep even this glass beam compact, because glass and all other the most finished productions of human industry still have some little roughness, which hinders their sliding down when very forcibly squeezed : but the plates composing our iron bar, were matter infinitely divisible, must be mathematically smooth, so that the greatest pressure could never make them cohere. Therefore we must conclude that the thinnest plates whereinto a beam or bar is capable of being divided are not mathematical planes

nor perfectly smooth surfaces, but have a roughness not separable from the rest of the plate whereby when forcibly compressed they take hold of the like roughness in the next adjoining plates.

II. Nevertheless as one must not expect to bring every one to the same mind upon so abstruse a question I will desire those who still hold the infinite divisibility of matter to consider that infinity is an inexhaustible fund, and how capable soever matter may be of such division it can never be effected completely. Let water, air, fire, or whatever causes you please rend asunder the parts of matter ever so long they can never reduce them to nothing, but their minutest divisions will still be body having figure and magnitude: so that we must necessarily conclude there are particles in nature which, notwithstanding all the divisions they have undergone or may suffer hereafter, never were and never will be less than they are. Therefore the most obstinate unbelievers of individuality may without scruple admit the doctrine of atoms actually, if not potentially, indivisible and that there is a Minimum below which, though bodies may be capable of being reduced, there is no power in nature that can reduce them: these then we may be permitted

ted to take for our first matter whereout all the bodies of the universe are compounded.

12. I said at first that infinite divisibility of matter was the doctrine now in vogue amongst the learned, but upon second thoughts I believe I have misrepresented them, and the mistake arose from want of distinguishing between infinite and indefinite divisibility. For I have observed that men of sober judgement forbear to decide anything concerning the former, which they own to be an unimaginable subject too perplexing for the human faculties to determine either way: but concerning the latter they unanimously agree that we cannot set any bounds to the division nor assign the precise number of parts into which any given parcel of matter may be crumbled. If my notion of existence has persuaded me that nature must make a stop somewhere in her dividings I shall not hesitate a moment to subscribe to the article of indefinite divisibility: for our thought knows no bound in the operation, nor does reason ever find an obstacle against contracting or extending her scale without end in measuring the objects she would contemplate. This is enough to serve the purposes of mathematicians and naturalists, and less than this being not enough, I shall endeavour to confirm it by some observations

which, though a digression from my course for the present, yet will not be useless by and by when I may have occasion to divide further than everybody will let me. For there are people whom you can please neither full nor fasting; they will battle tooth and nail for divisibility at one time, and at another will not allow you to use the principles themselves have laid down, but if you go to spin finer than they have been accustomed to, cry out against it as an inconceivable absurdity. Now as in the progress of these enquiries I may be driven to a necessity of supposing very small bodies to contain a multitude of various and dissimilar parts, that I may not shock anybody with an idea he might think quite out of the way if presented to him at once, I shall endeavour to prepare for its reception by producing instances wherein little parcels of matter are actually divided beyond what is commonly apprehended possible.

13. Those who have gone upon the same undertaking seldom fail to put us in mind of perfumes which they say will send forth an odour for many years without losing sensibly of their weight; and of leaf gold, a single grain of which we are told will cover a wire of 1625 feet long so entirely as to leave no spaces open between.

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But as the little corpuscles of light are probably the smallest bodies affecting our senses I shall try to make some computation, tho' far within bounds, how many of them may be thrown off from a certain quantity of inflammable matter. I have been informed that a wax candle of four to the pound may be seen in a clear night at two miles distance: this then held up two miles high in the air would diffuse its light throughout a circumference of four miles in diameter. Let us now consider how near the rays of light must lie to one another in this circumference so as to be discernible in every part of it, and we cannot well suppose them further apart than one eighth of an inch, for else an eye moving gently to the right or the left would find intervals of darkness when it came between the rays; therefore there must be so many rays as there are square eighths of an inch in such a periphery, and we shall find them upon computation amounting to 354816000. But this is not all, for each ray probably consists of successive corpuscles continually following behind one another, and the business is to find out how many of these successions may proceed from some substance whose quantity is assigned. A candle of the size above mentioned will burn about six hours, therefore a grain of wax, reckon-

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ing eighty pounds Troy to seventy three Averdupois, feeds the flame sixteen seconds. Now in order to discover how many successions of light must be sent out in that time let us have recourse to the pretty childish amusement of making gold lace spoken of at the beginning of our chapter on Reflection. Let a live coal be fixed upon a wheel and upon turning the wheel a little briskly you will see the coal draw a trail after it; as you encrease the velocity of the wheel the trail will lengthen more and more. Let the motion be accelerated until the trail just closes into an entire circle and then observe in what time the wheel performs its circumvolutions, for this will determine the length of a sensation: because it is plain the impression received by the eye from the coal at one point lasts until it comes round to the same point again, or else the circle would not appear compleat. We suppose the wheel to turn in this case (for I have never tried the experiment) ten times in a second: it will follow that an eye seeing the candle without discontinuance must have a fresh succession of light strike upon it in every tenth part of a second. But we have not done yet, for the circle made by the coal will not appear so bright as the coal itself when standing still, from whence we may infer that several successions following

lowing one another before the effects of the former is worn off are requisite to give us a perfect view of the objects we behold: we must think of some other contrivance to discover how many of these successions fall within the compass of a sensation. And for this purpose let a room be darkened excepting a long slit a quarter of an inch wide cut perpendicularly in the window shutter: let a large circular pasteboard be placed so as to turn very smoothly upon an axis laid horizontally upon a level with the bottom of the slit: cut a slit likewise of the same width in the pasteboard from the circumference to the center; cause it to be whirled round with an even motion just ten times in a second, if that be found the length of a sensation, and place your eye directly over against the window but on the opposite side of the pasteboard by which means you will have no light but what comes through both the slits. In this situation I apprehend you will see light continually near the center of the pasteboard but none at a distance, because there the aperture will be too small to admit it. If you can observe exactly the limits between light and darkness you may determine how many successions at least must follow during a turn of the pasteboard: for the rays having no admittance unless during that interval wherein
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some part of both flits fall in a line with your eye, in which time the pasteboard will have moved half an inch, the proportion this bears to the whole circle described by that part where you see the light terminate will give the successions falling within the compass of a rotation. Suppose for instance you can discern light so far as eight inches from the center, a circle drawn upon such a radius will measure fifty inches round and contains a hundred of those spaces the rays have to pass thro': since then you still perceive them, you may rest assured they keep flowing in every hundredth part of a turn of the pasteboard, and if ten of these were performed in a second there must be a thousand successions following in that time. Therefore to find the number of corpuscles produced by our grain of wax, during its sixteen seconds burning we must multiply the prodigious number before set down by 16000, which will give a produce of 5677056000000.

14. I have proceeded upon a supposition that the rays of light are not continual streams but little balls or corpuscles following one another at certain distances: and if there runs out no more of them than a thousand in a second the distance between every ball and the next behind will be a hundred
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fixty fix miles and two thirds upon a calculation from the known velocity of light. Wherefore if you will imagine a ray to be an entire thread or string of balls touching one another, you must multiply the product we have already by as many balls as you can suppose lying within a length of a hundred fixty fix miles and two thirds. But this would be carrying the matter too far, for we learn upon the authority of Sir Isaac Newton that light is emitted by vibrations in the parts of luminous bodies, which vibrations can act only at intervals in that part of their swing when they are moving outwards and not when they are returning, wherefore the matter they throw off cannot flow in a continual uninterrupted stream. Nevertheless we may find several reasons making it probable that we ought to encrease the sum of corpuscles already computed: for as there are creatures much quicker sighted than man, if you could teach a cat to make and communicate the observation tis not unlikely that puss might give the signal for seeing light much higher up the pasteboard than you could perceive it, which would convince you there are more successions than you had found yourself. Nor could you still be sure of having them all, for a single ball may be too feeble to cause vision at all and it may require
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the united force of many to excite a sensation in the optics of any animal whatever : so that you cannot know for certain that the light does not find a passage at a height where neither you nor the cat can distinguish it. We may consider further that the rays at two miles distance from the candle may lie closer together than one eighth of an inch ; that light itself is a compound body consisting of seven different coloured parts, as appears by experiments with the prism ; neither does the wax turn entirely into light, for we know a great part of it goes off in smoke and vapour ; nor yet perhaps is the substance of the wax at all converted into light, which some hold to be a body of its own kind dispersed among the pores of luminous bodies and not entering into their composition, in which case it must bear a very inconsiderable proportion to the grain we suppose the wax to have weighed. From all which considerations it may be concluded we have been very moderate in our computation which is more likely to fall greatly short of the truth than to exceed it.

15. Now how astonishing soever it may appear to find a drop of wax shattered into such a multitude of pieces our astonishment must encrease when we reflect on the great tenuity of the wax and how far it is from being a solid substance. Sir Isaac Newton assures

shews us that gold, the most substantial body we know of, contains more of pore than solid substance: therefore wax, which will swim in water, does not really occupy one fortieth part of the space it seems to fill. Some have gone so far as to suppose that all the matter of this visible universe compressed into a perfect solid would form a cube of but a few inches on every side. I shall not attempt to make calculations of this sort having no sure foundation to build upon: but I think it may be made appear by experiments of the firmest and compactest bodies that the solid matter contained in them bears a very trifling proportion to their apparent magnitude. I believe few will deny me that whenever a heavy body lies upon another they touch, for nothing else besides their solidity and contact prevents the uppermost from falling still lower. Some perhaps may controvert this point, because it being held by the best authorities that every particle of matter has a certain sphere of attraction immediately beyond which there begins a sphere of repulsion whose force decreases in more than duplicate proportion the farther you recede from its internal limits, therefore a body falling towards another, when come within the other's repulsion, will be stopped thereby before contact and kept suspended in the air,
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the force of repulsion exactly ballancing that of gravitation. But this however plausible in theory will appear not to be true in fact, because bodies laid on greasy or dirty places upon being taken off again withdraw something from thence sticking to their bottom, which shows they were in actual contact before, for the adhering particles can never be supposed to follow what they had constantly kept aloof by the vigour of their repulsion. Besides considering how very small the sphere of strong repulsion is, if a book laid gently upon the table did hang suspended yet by a smart stroke upon the upper side you might drive it down within the inner sphere of attraction. From hence we may conclude that bodies lying upon each other have some of their parts in actual contact, and consequently, since all body is endued with an attraction of cohesion, they must adhere in such parts, and the largeness of their contact may be determined by the strength of their coherence.

Now suppose two plates of gold, the heaviest of substances, as perfectly polished as art and industry can make them, let one be laid flat upon a table and the other suspended horizontally by strings upon one arm of a balance, hanging a weight to the other arm that shall exactly counterpoize it, then let down
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your ballance gently till the plate rests upon that on the table touching it apparently on its whole superficies. If you encrease your weight and the ballance be very good I apprehend a very small one would suffice to draw up the upper plate from the under and consequently to overcome the cohesion between them : a pennyweight might do it tho' the plates were a foot square, or perhaps a hair could you get a ballance perfectly smooth without any friction. Now were a needle worked into the two plates so strongly as that they could not be parted asunder without breaking the needle it might require many pounds weight to separate them when so fastened. But the parts of compound bodies being held together not by any glue or cement between but solely by their mutual cohesion corresponding with their contact, the strength of the needle to resist breaking must be according to the contact its two pieces had together before their disruption ; which strength being found so vastly greater than that exerted by the plates to keep themselves united it is plain the whole superficies of their touching parts bears no discoverable proportion to that of the transverse section in a slender needle. From hence we may gather that the superficies of the plates resemble a network of wire whose meshes are immensely larger than the

thickness of the threads and whose threads do not correspond with those of the other plate but only cross them in some few points. And since if instead of the plates you had a regular cube of gold and were to try with one of the sides which make the thickness of the cube instead of the bottom the experiment would succeed the same, it follows that the compactest bodies are meer network in all their dimensions, containing incomparably more of empty pore than solid substance. But it is happy for us that they are so, for else we should have no use of our goods and utensils by reason of their perpetually sticking together beyond our power to detach them; nor could you venture to lay your flat hand upon a table for fear of being never able to draw it off again.

16. If it should be thought hard of digestion to imagine that iron and steel, which force their way so readily thro' other things, should be themselves such hollow shells or wire cages as we have represented, let us remember that all strength is relative and there is no absurdity in imagining that one hollow shell may penetrate thro' another a great deal weaker: nor should I despair, if any virtuoso that has nothing else to do would undertake the trouble, to see a knife made of the tinder of coarse cloth that would cut tinder of muslin

lin as cleverly as we do cheese with a knife of steel : but then the experiment must be tried in vacuo for fear any little motion of the air should bend our instrument and make us haggle or cut awry. On the other hand I dont doubt that if we could toss a little ball of perfectly solid substance ever so gently against iron, marble, or other the compactest body upon earth, we should see it make its way thro' them as easily as a leaden bullet would if laid upon the top of a whipped syllabub. Having thus vented my thoughts upon the divisibility and rarity of matter which, if good for nothing else, may serve to entertain the curious, I shall resume my journey and proceed from the consideration of body to that of mind.

C H A P. IV.

EXISTENCE OF MIND.

HOW little success soever I may have had in proving the divisibility of matter indefinite but not absolutely infinite, it will not affect the exclusive title of individuals to existence : for be the smallest particle

infinitely divisible it is still existent only in respect of the infinity of existent parts it contains. And upon this hypothesis we must admit a gradation of infinities, some greater and others less; because if half an orange contains an infinitude of parts, the other half must contain another, and consequently the whole orange will carry an infinitude double to each of the halves. Now that infinity of parts whereof the whole material universe consists, although, it seems, capable of being enlarged by the accession of more matter, will not admit of encrease by composition: for there will not be one more Being nor a larger infinitude in nature upon those parts running into clusters than there would have been had they continued for ever separate. So that compounds have no place among the rank of Beings nor does their formation add anything to the number of them.

2. Therefore in order to determine between the divisibility and unity of Mind let us examine whether it has a distinct existence of its own and whether upon the production of one there must not be a new Being, not barely a new sort of Being, in nature added to those existent before, their infinitude being encreased by the accession of that one. And for this question I need only refer to the
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sence and understanding of every man to answer whether he does not perceive himself to have a real existence distinct from all other Beings beside. I do not mean in kind, for there are innumerable other beings of the same species with himself, but in numerical identity, and whether there must not be one more Being in nature for his existence than there would be without him : but if he consisted of parts there must have been the same number of Beings existent when he was not and before the combination of those parts in their vital union, which are become thereby a different kind of Being, that is, the same substance in another mode of existence. Some have doubted the reality of body, of space, of distance, of magnitude, of all sensation, imagining these to be no more than perceptions rising unaccountably in the mind : but I believe no man ever doubted of his existence at the instant time when he reflected on it. If there be a man of so uncommon a turn as to make this doubt, and he must have another doubt beside, to wit, whether he doubts or no, for non-entity can no more doubt than be assured, he may e'en turn his back against me for I pretend to work no conviction upon him. For the rest of us we shall all readily allow that we have an idea of existence, but whence should we first get it

unless from ourselves? for if we are not, we can perceive nothing and know nothing, and consequently can have no assurance of the reality of other things: so that our persuasion of all existence besides must begin and have its foundation in that of our own.

3. But our ideas being taken originally from sensation and we having accustomed ourselves to regard whatever appears constantly together as parts of one whole, we contract a grossness of conception which makes us apprehend ourselves as comprizing the whole human composition. For our flesh and members accompanying us wherever we go and the operation of external objects ending at the surface of our bodies, we conceive sensation diffused throughout them and our very selves extending to the extremities of our organs where we receive the impulse: for because we see with our eyes and touch with the ends of our fingers we apprehend ourselves actually present in those parts where we take the impression of objects. But not to insist upon the discoveries of anatomy by which it appears that their impulse must be conveyed along the nerves before it affects us with any perception, everybody knows that men may be deprived of their limbs or their organs by diseases or accidents and yet retain their existence. Let a man lose a leg or an
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arm, an eye or an ear, he still continues the same man and holds his rank upon the list of Beings as much as he did before. Whatever can be separated from him he may look upon as a possession, an instrument or organ of conveyance, and that alone which remains after all imaginable separation is properly himself. Besides, our organs have their separate offices not interchangeable with one another: the eye which sees cannot hear, and the ear which hears can never see; but they being numerically distinct, if they were the perceptive substance, it would follow that what sees is a different thing or substance from that which hears. Therefore they can only be channels of conveyance to some one individual thing: for no man can doubt but that it is the same Himself which sees and hears and receives all other perceptions; and we cannot conceive this self divisible because what might be taken away upon division would not be him, for he cannot be parted from himself. Compound bodies consist of parts having the same nature and primary proportions with themselves, nor is it conceivable that any assortment of unsolid or immovable parts should form a solid and movable body: then if composition prevailed in Mind too every Self must contain a number of little Selves, every Mind many little

Minds, and every Sentient principle a multitude of Sentient principles. But this is a supposal that will not bear the mentioning, for who would not be shocked to hear talk of a half or a quarter of a man's self? Besides if things sentient were divisible the parts might be dispersed throughout the four quarters of the world, and a man might have perceptions at the same time in Europe, Asia, Africa and America.

4. To avoid this absurdity there have been those who have asserted that Self, Mind, or a perceptive Being may be produced by a combination of unperceptive principles: not to repeat what I had urged before, that then there may be a creation effected by compounding, let us remark that upon such combination the parts considered singly cannot have, nor are they pretended to have any other properties than they possessed before, neither can they club to take their several share of a perception; for perception has not parts without parts and therefore cannot be received piecemeal, but the perceptivity resides in the whole compound jointly. Now it seems very hard to understand how a collection of distinct substances, for such every compound must be, can perceive what is not perceived by each of them. I can perceive a whole camp to hear the evening gun because
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every man in the camp hears it, but I cannot comprehend how they can all hear a sound that escapes every single person. And the case would be the same if they were tied or glued together or if the brains of all could be crowded into one head : nor can I for my life distinguish between their all hearing it and every one of them hearing it : so neither can I discern with the utmost stretch of the microscope a perception in any compound or collection of substances, however compacted or united together, which must be compleat in each of them. The ancient Hylozoists, as we learn from Cudworth, ascribed an imperfect perception to their atoms, which was not perception till it was rendered compleat by the junction of several of them together, and he seems to have had a notion of this imperfect perceptivity himself in his plastic nature of elements and vegetables though he never attempted to compleat it by junction. But I can no more comprehend how an imperfect whisper heard by twenty persons shall become an audible voice than how they can all hear a sound heard by none of them singly : I would as soon undertake to explain how a letter might be sent a hundred miles in an hour by employing twenty men who could walk five miles apiece in the time.

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5. We commonly apprehend things to remain the same while they continue to serve the same purposes and exhibit the same appearances, thus you call a canal the same notwithstanding a perpetual influx and efflux of the waters and after you have new turfed the banks, but tho' it be the same canal no man will esteem it the same substance, for it seems necessary to substantial identity that the component parts should remain unchanged. So if the mind be a compound, then upon some of the parts being slipped away and others substituted in their room, tho' it might still remain a mind it must be a different one from what it was before : and as Lucretius tells us the mind grows and decays with the body, every man would have a different self in his childhood, his maturity and his old age.

6. But it may be said that mind is not so much a collection of particular atoms as a figure or harmony resulting from the order wherein they lie, and therefore may continue the same altho some or all of the atoms be shifted : for if you place twelve shillings in a circle, change your shillings as often as you please for others you do not alter the figure which still remains a circle. But what then becomes of our own existence ? for form has none but is only a modification or particular manner

manner of existence in body; and harmony has none being nothing more than the concordance or mutual congruity of sounds whereby they affect the ear in a particular manner. Besides, where shall we place personality? for there is no difference between similitude and identity in forms: an egg at York is of the very same shape with an egg at London, and a concert of the same music play'd upon the like instruments gives the same harmony in both places: therefore two minds composed of atoms having an exactly similar disposition must be the same person, and thus there may be a thousand same persons in so many different parts of the globe as there may be a thousand same forms and harmonies. The same circle may be drawn at once in Tartary and in Chili, or the same tune play'd at Canton in China while it is playing at London. Therefore if one particular form or harmony be you and another particular form or harmony be me, there might be as many you's and me's in the world as there are clusters of atoms capable of running together in the same manner as ours have done. For it may be remembered that we are not now supposing mind to consist of a number of particles combined together in such or such order but to be the order itself considered apart from the particles and equally capable of residing

ding in any other that should be brought within its compass. Or if you make any other identity of form than that of equality and similitude, then upon having flatted a globe of wax by which you absolutely destroy the roundness it had, it will be impossible to restore it to the same figure again: because if the roundness of one piece of wax be a different thing from the roundness of another, by the same reason the roundness it receives upon a second moulding will be a different thing from that it had before being flatted, as being a figure newly produced, not one drawn back again from some place where it had lain dormant in the interim.

Nor will it be easier to preserve the identity of Mind in one collection of particles than we found it to distinguish the diversity of minds in several: for if each particular mind were nothing but a certain order of the particles composing it we must lose our identity upon every turn of thought; for we may perceive a change in our mind upon passing out of pleasure into pain, but there can be no change among forms without a locomotion of the component parts which must destroy the order they stood in before. If you change the place of any two in your circle of shillings you spoil your circle while they are passing into each others stations: therefore if
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personality depended upon their circularity the shillings during that interval must make none, or at least a different person, or should you fancy the varieties of thought made by a variety of motions of the whole compound we could never think of two things together, the same body being incapable of moving with two different velocities or in two different directions at once. Let us consider likewise the variations of character, disposition and expertness frequently happening in the same subject: the sucking child who knows not his right hand from his left, may when grown up become master of several sciences; the cross grained peevish unlucky boy may sometimes by good management be made to turn out a sober discreet and well behaved man. But if they were nothing more than compositions these permanent changes, which render them a different sort of creatures, could not happen without a change of structure in their component parts; which must produce a diversity of compositions and consequently a diversity of persons: contrary to the apprehensions of all mankind who esteem themselves the same person from the cradle to the grave notwithstanding any variations of character or capacity they may have gone through in the interval.

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7. There seems to lie the same objection against Mr. Locke's doctrine of consciousness constituting identity: it would be presumption in me to contradict a man of his clear and steady judgement, therefore shall suppose I have some how or other misunderstood him; but to the best of my apprehension he seems to have placed our existence in a quality rather than a substance, for by the term Consciousness I cannot understand a Being, but only a power or property of some Being; nor do I apprehend a man loses his existence or personality every time he loses his consciousness by falling fast asleep. Could Mr. Locke himself imagine that his person was annihilated every night when he went to sleep and re-created again when he awoke in the morning? The most I can allow to consciousness, unless I grossly mistake the word, is that it should be in most cases the evidence to us of our identity, for scenes that we remember convince us of our being the very persons present at them. I said in most cases but not all, for who does not know that he was once a baby wrapped up in swaddling cloaths? and who does not believe that baby to be the very same person with his present self? yet I never heard of anybody pretending to have a remembrance or consciousness of his being in that condition. Nor do I find little difficulty
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in settling the identity of consciousness, for in quality, as I observed before in form, I know no difference between identity and similitude: whatever has a like quality with something else, to my thinking has the same. If I have done anything I would conceal yet I am conscious to myself that I have done it, and I suppose you would be the same upon the like occasion and so would every other man; therefore we are all one and the same person. Well but you all are not conscious of the same fact with me, so the identity of the consciousness depends upon the identity of fact: but this will not do neither, for I am conscious of several actions I have performed and therefore should be so many different persons. The only way remaining in which I can understand an identity of consciousness is by placing it in the consciousness of the same person, in which light the idea of person must precede that of consciousness: so it is no help to tell me I may find my personality by my consciousness because I must fix my idea of personality before I can make use of the explanation.

8. Mr. Locke has somewhere unluckily let drop that he conceives it possible the faculty of thinking may be annexed to a system of matter, and this notion has been eagerly laid hold of by my lord Bolingbroke to confirm

firm his opinion of the corporeity of all thinking substances. For my part I am not so confident of my own understanding as to pronounce it impossible for nature to do what I cannot conceive possible to be done: but this I will say, that I cannot conceive it possible perceptivity should be annexed to a system, by which must be understood a composition, of matter or any other substance whatever but must reside in something that is numerically One and uncompounded. For suppose an object to strike upon any one component part of the system, if it raises a compleat perception there, then the rest are useless: if the perception does not begin till this part has communicated the impulse to some other, then is that other the perceptive substance and the first only an organ of conveyance: if both receive it equally, then does the faculty belong not to the system but to the several parts. Nor can each take its respective share of the perception, for as we observed before, it is inconceivable that a perception should be received piecemeal or made up of what is no perception. And this matter will appear plainer if we consider the nature of judgement and comparison, where both terms of the one and both branches of the other must be apprehended together in order to determine between them. If this
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man knows the other properties of gold and tother knows what ductility is, they can never know the more for this, either jointly or separately, whether gold be ductile : so if one be ever so well acquainted with St. Peter's at Rome and the other with St. Paul's at London, they can never tell which is the larger, the handfomer, or make any other comparifon by virtue of this knowledge. But you fay one may communicate his knowledge to the other, very true, but then each has the idea of both before him in his imagination, and the judgement is the act of either feverally nor of both jointly. Nor is the case different with respect to the parts of a percipient system : let the idea of an elephant be impressed upon particle A and that of a mouse upon particle B, they can never know either jointly or separately which is the larger creature, nor can a judgement be formed until the ideas of both coincide in one and the same individual.

9. And what has been said of perception may be applied equally to volition : for as a body could neither impell nor resist another unless all the particles of the whole mass, be they finite or infinite, had a quality of impelling or resistance, for it is unintelligible to talk of an impulse arising solely from the composition : so neither can any system have

a power of beginning motion where there was none in the parts. A hundred men may certainly lift a weight that would crush any one of them, but a thousand would never be able to stir it unless each man had some strength of his own independent on the rest.

Whence we may justly conclude perceptivity and activity to be primary qualities, essential to the substances possessing them, inseparable therefrom, belonging to individuals, and not producible by any combination whatsoever of imperceptive and inactive ingredients.

10. If Self be not a substance but a system of substances ranged in some particular order, there appears no such necessary connection between any one Self and any precise collection of substances or percipient form (for we now proceed upon a supposition of forms being percipient) but that they might have contained any other Self: so that these substances and this form which now constitutes Myself might as well have constituted the Self of John or Thomas or any other person without implying a contradiction or absurdity; and we must look for some cause yet undiscovered to assign each system its personality. This cause then before I was existent might have assigned my personality to any other similar substances disposed in the like order in some distant part of the globe:

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now why may not this cause do the same at this present instant? for how should my existing in the spot where I now stand hinder the operations of nature elsewhere, or incapacitate her from doing what she could have done a hundred years ago? therefore there might have been two Myselfes some thousand of miles apart. But if such a supposition would shock the ears and understanding of every man it will necessarily follow that every Self must be a substance numerically distinct from all others, of whose identity no other substance nor system of substances can participate. And if a substance, it must be One uncompounded of parts; for I am nothing else besides Myself, nor can contain anything that is not Me, nor yet can I have parts which are neither Me nor anything else. As a piece of matter divided makes several pieces, and a compound form dissolved becomes many lesser forms, so a perceptive substance divided would yield many percipients, and perception always implying personality, each percipient must have a Self distinguishing it from its neighbour: so that upon supposition of a divisibility in the substance of Mind, I should contain as many Selves as there are parts in my composition.

11. Thus have I endeavoured to place this matter in as many different lights as I

could and to turn it about in all manner of ways ; but it happens sometimes in these abstruse disquisitions that the very pains we take for illustration renders the subject more perplexing, for being forced to spin our thoughts very fine they become liable to entangle in the readers hands, and the multiplicity of ideas into which we divide them by such refinements distracts his attention and causes them to throw a cloud over one another. Therefore since I apprehend this a matter of importance I wish every one would consider it afresh in his own way and satisfy himself, in a manner most suitable to his own liking, whether he has not a real existence distinct from every other Being whatever, and whether Self be not an indelible character which cannot be taken from him nor exchanged with any other person. We often talk of what we would do if we were Such a one, that is, if we were in his place, with his strength of limbs, endowments of mind, fortune, or circumstances of situation : but no man can even in imagination suppose himself to feel for another or act for another, to perceive his sensations or perform his actions, or that that ether should be his very self. We have heard of metamorphoses and transmigrations from one form of Being into another, I do not desire anybody to believe the truth of
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those relations but the pleasure we receive in hearing them shows they are not unfamiliar to our imagination, nor do we apprehend a contradiction in supposing the same person to take various forms. But in all those changes the same Self continues throughout: Calisto when a bear and Ino when a cow are the same persons, though different sorts of creatures, that they were while women, nor does Euphorbus lose his identity by becoming Pythagoras: and though they should lose their remembrance or consciousness still we rejoice or grieve with them according as we think they have deserved in their former state. When the poet tells us that Aristotle's soul of old that was may now be doomed to animate an ass, or in this very house for aught we know be doing painful penance in some beau; though he goes too far in calling it a painful penance, for the beau perhaps is well satisfied with his present condition and would think it a terrible misfortune to be restored to the dry notions and musty metaphysics of Aristotle, yet we still apprehend the same percipient substance existing in both. We may imagine ourselves having new members added to our bodies, four legs or twenty arms or a pair of wings sprouting from our shoulders, yet still we should remain the same selves: or we may imagine

ourselves losing our limbs, deprived of our faculties, and becoming senseless as the stones before us, yet even in that case we should not apprehend ourselves the same substance with the stone we see: whence it appears that we are possessed of an existence and identity of which we cannot even in imagination divest ourselves.

12. And for individuality if we cannot find that in ourselves we can find it no where, for all the bodies we behold are undoubtedly compounds, and we have seen in the last chapter how difficult it is to ascertain whether there be atoms or no, and if there should be we cannot come at the apprehension of them either by experience or reasoning. But we cannot comprehend ourselves composed of parts so as that something might be taken away and the remainder make an imperfect self, or that such imperfect self should become perfect upon the accession of something else. A house may be half built and then is something of a house but not an entire one; a foetus may be half formed and then is an imperfect man: but in personality there is no medium between completion and non-entity, we cannot half be but must either be compleatly ourselves or not be at all. By such considerations as these I apprehend a man may convince himself of his being neither
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ther a form nor a harmony nor a system, nor yet a quality or consciousness annexed thereto; but a real existent substance numerically distinct from all others, uncompounded and consequently indivisible.

C H A P. V.

S P I R I T.

HA V I N G settled with ourselves that Mind has a being of its own distinct from that of all other things and is a pure unmingled individual substance, nevertheless for any thing that has yet appeared it may be a single atom of matter, since we have supposed existence and individuality to reside in atoms: now in order to discover whether it be so or not let us examine wherein our idea of matter consists. The essence of things arises from the qualities we find them have, for to ask what a thing is implies a presupposal of some substance and a want of information concerning what qualities it possesses or what appearances it exhibits. Mr. Locke pronounces our idea of substance very confused, and so indeed it is if we go to consider it

singly, for you cannot form a clear idea of naked substance divested of all its qualities or manners of making itself known to us : but there are some things we apprehend well enough in the concrete though we cannot in the abstract, as has been made appear with respect to surfaces, which we conceive easily while lying upon the main body yet cannot by any effort of our imagination detach them therefrom without pulling up a lining besides ; so if we cannot form an idea of substance apart from all other ideas yet when we see qualities affecting our senses we may have an unconfused idea of something exerting them having a real and actual existence independent of everything else. For forms and qualities are not Beings, but modes of existence in other Beings, and the appearances they exhibit must come accompanied with another idea of actual existence in the subject containing them. Therefore if I were to make our idea of substance the same with that of actual independent existence, which we cannot conceive apart from every manner of existing though we can easily with it I should not deserve much blame from Mr. Locke, who doubts whether space may not be ranked among the class of substances because it has a reality independent on any other substances lying within it.

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2. But I believe nobody ever suspected the substantiality of space before Mr. Locke, and he goes no further than to declare his ignorance whether it be substance or accident; yet few have denied the reality of space or that we may conceive a vacuum without any substance whatever to occupy it: this is one of the most familiar ideas to our imagination, for any common person entertains it every time he thinks of an empty bottle. Whence we may conclude that substance in our ordinary notion of it is that species of existencies which has perception and action, or which affects our senses or causes discernible alterations in other substances: wherefore space is not usually ranked among substances because it does nothing, produces no effect, but is the most passive of things, permitting all else to remain in it, remove from it or pass through it; we neither see or feel it, nor does it touch any of our senses, but is rather an idea of reflection, for upon discerning objects in different quarters and observing their distances we gather by inference that there must lie a space between them.

3. I shall not pretend to be wiser than Mr. Locke nor to ascertain whether space be properly substance, but our comfort is that it matters not for our present purpose whether we can decide the point or no, since nobody
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ever dreamt of Mind being meer empty space: so the question lies between its being a corporeal atom or distinct species of substance of a kind peculiar to itself. We get our first idea of substance I conceive from ourselves, our perceptions convincing us of our existence, not as is commonly supposed by logical inference, I see, I feel, therefore I am, for we know our own Being long before we learn to make such abstractions, nor can one imagine a child to form syllogisms or draw consequences of this kind: but the idea of Being is contained in that of perceiving, for you cannot understand a proposition without apprehending the several terms composing it, and in the proposition, I feel, the term I expresses something real and substantial, or else it would not be different from the proposition Nothing feels, which rather implies a denial of feeling than carries an evidence of it, nor can there be an idea of actual feeling without something that feels.

4. On the other hand to compleat our idea of feeling there must likewise be something felt, and this gives us our knowledge of substances without us: for when we grasp a stone in our hand we find it press against our fingers so that we cannot close them into a fist as we might have done before, whence we apprehend it to be a solid substance; and
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if we cast it behind our back where we can neither see nor feel it, still we conceive it retaining its solidity. But we discover its solidity by other ways, for if we see the stone squeezed hard by a pair of pincers or struck by another stone hitting against it, though there be no feeling concerned in the case yet we perceive the stone makes a resistance against whatever presses or strikes upon it: but this resistance between bodies never happens until they touch, wherefore I look upon solidity, resistance and tangibility as the same thing, or at least to depend upon one another and to be inseparable from our idea of body. Lucretius asserts roundly that nothing besides body can touch or be touched, whether he knew this for certain is more than I can tell, but thus much we must allow him, that if there be anything which cannot be touched it is not body and where resistance necessarily ensues upon contact there must be body: but when astronomers in describing an eclipse talk of the shadow of the earth touching the outer limb of the moon, I suppose Lucretius would not allow this to be touching. And indeed our touch gives us the first evidence of external substances, which do not discover themselves to our other senses until we have been convinced of their reality by that: wherefore the vulgar apprehend favours, odours

odours, sounds and light to contain nothing substantial, and the learned will hardly deny that the effluvia causing smells and tastes, the undulating particles of air exciting sound, and the little corpuscles of light, might be felt as well as a stone had we fingers fine enough to pick them up and squeeze them singly; and how much soever they may contend that light touches neither the coloured bodies reflecting it nor the substance of our eye but operates and is operated upon by attraction, yet since it is a received maxim that nothing can act at a distance or where it is not, they must admit it touches the other or whatever else by its pressure causes that attraction.

5. I know not whether I am singular in the notion, but to me resistance seems a kind of acting power essential to body; impulse I know it cannot give until received from something else nor encrease it beyond the degree imparted, but when a body resists another striking against it, it does not do so by virtue of any force imparted therefrom but by an inherent quality of its own. Nor can it be doubted that others have entertained the same notion before, if I translate their latin expression aright wherein they stile the perseverance of body either in motion or rest a Force or Power of Inertness. However as activity has
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all along been understood of a power of beginning motion I shall not comprehend the power of resistance, if it be one, under that term.

6. Thus solidity, resistance or tangibility seems the only positive ingredient in the essence of body, mobility being rather an accidental property than anything essential. But besides this we apprehend body to be senseless and inert, which are only negative terms importing no more than a denial of perceptivity and activity; but these negative terms seem the distinguishing characteristic of body. The Hylozoists indeed by Cudworth's account of them held a mean between perceptivity and senselessness, between motion and rest, something that was neither perception nor stupidity, neither action nor inertness, but resembled the thoughts of a man half asleep or muddled with porter and that a multitude of these drowsy atoms clubbing forces together might form a genius penetrating, alert and sprightly: all which whoever can understand must be a much shrewder man than me. But bating this whimsy it has been universally agreed that matter is of itself void of activity and perception; and though the Stoics and other corporealists conceived that thought and volition might result from a combination of matter luckily disposed into an organized

organized system, yet since we have satisfied ourselves of the distinct existence and individuality of Mind we may safely conclude that it is another species of substance essentially distinct from body and which we call Spirit.

7. As no bounds can be set to the imagination of man and new fancies arise in proportion as old ones are exploded it may come into somebody's head one time or other to improve upon the Hylozoists and ascribe a compleat perception and volition to the atoms. For he may imagine it possible that the mutual action of bodies upon one another may arise from a voluntary exertion of power upon motives, that when they cohere it may be from some satisfaction felt in their contiguity, and when they resist or repel, from some uneasiness brought upon them by the impulse; from which two actions all the operations of nature proceed. So that what was supposed to be spoken figuratively by the ancients, that all things were produced by Love and Hatred, whereby they were understood to mean attraction and repulsion, may be literally true. And here the abettors of indifferency will have an advantage over me, for they may infer from bodies acting constantly in the same manner, under the same circumstances that they have not an
elective

elective power, which they conceive an essential property of spirit; but I, having said so much and being like to say more concerning the certainty of human action and having remarked that the conduct of persons who have the fullest freedom of will and command of themselves is more steady and accountable than that of the giddy and sensual, am deprived the benefit of this argument. Therefore I shall not undertake to prove demonstratively that the fact is not so as above supposed, but I must observe that if it could be made out to be true, though it would follow that there was but one kind of substance in nature, it would not follow that this substance was body: for the idea of body including inertness and senselessness, if the atoms were sentient the consequence would be that they were spirits, and mankind would have been all this while under a delusion in taking the trees, the stones, the earth they see for bodies when they are not in reality such but clusters of spirits held together by the delight they take in one another's company; and if any important particles of light come to intrude among them they drive them in great hurry away to our eyes. But as this is a meer imagination, like Berkeley's ideal world, Leibnitz's pre-established harmony and Hartley's

ley's mechanical volition, built upon bare possibility without support of any proof, I shall remain persuaded with the rest of the world that the bodies we see and handle are substances of a different kind from ourselves who see and handle them.

8. Now to compare body and spirit together we must acknowledge the character of substantiality belonging in common to both; but they are generally held to differ in these respects, that spirit is penetrable, unextended, having perceptivity and activity, by Mr. Locke called motivity, to which some add illocality, and others self-motion; body solid, extended, senseless, inert, occupying space and movable upon impulse. I have already laid down the capacity and incapacity of perception and action for the distinguishing marks of either, so have nothing more to add upon them: but concerning the other qualities, as I happen not to enter thoroughly into all the current notions of the schools, I shall take leave to deliver my sentiments with the freedom of one who would judge for himself but without the arrogance of one who would suffer nobody else to do the like. I shall begin with penetrability which, tho' confidently asserted, appears to me a doubtful point whereon we have not sufficient foundation to determine either way: we see
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by a thousand instances every day that bodies protrude and resist one another, nor can the most yielding of them be forced into the same place by all the contrivances of art or powers of nature; but how know we what would be the case with spirit could we see the experiment tried? We live immured in walls of solid bone so that we cannot come at our sentient part to push against it with our finger or apply it to the sentient part of another person in order to know the result. Could we pick a spirit out of its cell and move it along a line upon the table where there lay another spirit with some little body before, we might satisfy ourselves what it would do. If we found it stop at both or protrude them forward we must pronounce it equally solid with body: if it passed easily through the body but stopped at the spirit, we must conclude body and spirit alike solid with respect to substances of their own kind but penetrable by those of the other: if it found resistance from neither we might then pronounce penetrability the distinguishing property of spirit: but these are trials we can never have an opportunity of making.

Were I permitted to conjecture in a matter wherein nothing better than conjecture can be had I should suppose spirit naturally penetrable but capable of rendering itself solid up-

on occasion with respect to particular bodies, and that hereon our activity depends. I have formerly given my reasons for imagining that the force wherewith we move our limbs is derived from the animal circulation rushing into the muscles through certain nerves, and that the orifices of these nerves are provided with stoppers which the mind draws up at pleasure to give the animal spirits admittance: now what should hinder our conceiving these stoppers pushed up by little hairs or fibres whose other ends lie within our spiritual part, which by its natural penetrability admits them into the space where itself resides? but upon the mind rendering herself solid with respect to any particular fibre, it is driven forward, thereby lifts up the stopper and opens the passage into the nerves; until volition forbearing to act the penetrability returns, the fibre no longer pressed falls back to its former station, the stopper following closes the passage and muscular motion ceases. Whoever should think this conjecture probable would see that spirit possesses the united powers of body and space: for body resists but cannot admit, space admits but cannot resist, whereas spirit can either resist or admit as it pleases. Nor let it be made an objection that upon the fibre entering the residence of the mind there must be two substances exist-
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ing in the same place, for I see no inconsistency in imagining substances of different kinds to co-exist together: if space be a substance all bodies co-exist with some portion of that, and if there be a Being which fills all immensity all other substances must co-exist with it or they will have no where to exist at all.

9. I have already owned that I have but an imperfect notion of what the schoolmen understand by extension; if it imply a consisting of parts I cannot be suspected of ascribing that to spirit after the pains I have taken to prove that perceptivity can belong only to individuals. But I have an idea of a thing being extended without parts, and so have other people if one may judge by their discourses: for I have heard of the stench of a brickkiln reaching into the houses in London, and of a noise extending many miles around yet I never heard anybody talk of the half or the quarter or any other part of a smell or a sound. And though these be not substances yet having once gotten the idea of extension without parts, I do not see why we may not apply it to substance, which we may conceive existing and present throughout a certain portion of space without losing its unity. I cannot well be denied the possibility of such a diffused presence by far the greater part of

mankind who hold a simple indivisible Being present in all the regions of immensity. But that we ourselves have this extension in my sense of the word, though bounded within very narrow limits, we may be satisfied by considerations drawn from facts falling daily under our notice and principles universally agreed upon. It is an uncontroverted maxim and may pass for a self-evident truth that nothing can act or be acted upon where it is not, and though bodies seem to act at a distance there is always some medium passing between the agent and the patient nor is anything done to the latter before the arrival of the medium. Thus an engineer may batter down a wall a mile off but the ball does no execution until it touches the wall. In like manner we see and hear and are otherwise affected with bodies lying far from us, but then something must be thrown from them to strike upon our organs and raise motions there which are propagated onward to the seat of perception : nor can we receive sensations of any kind unless the nerve or animal spirit or ether or whatever else it be immediately exciting them either penetrates the mind itself or at least comes into contiguity with it.

Now let us suppose a chess board with double sets of men, a red and a green besides
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the yellow and black, so that every square of the board may be covered with a piece: set this board upon a table before you and I believe it will be granted me that you may have a distinct view of all the pieces at once. We cannot imagine that matter raises different sensations otherwise than by a difference of size or figure or velocity or direction or composition or other modification, but the same particle of matter can be susceptible of no more than one modification at once, therefore there must be sixty-four particles at least operating upon the mind together in the above experiment, I say at least for tis more than probable that each object upon the board employs many particles to convey its idea: which sixty four particles cannot possibly enter nor become contiguous to a mathematical point, and consequently the mind must at the same instant be actually present throughout such a portion of space as may touch or contain them all. This space I shall call the sphere of our presence, not that I pretend to know it must be round, but because it is the fashion to apply that term to every figure we know nothing of. If the reasonings above used be just, and I can discover no flaw in them, they will demonstrate a remarkable difference between spirit and body, for the sphere of a spirit's presence

be found at least equal to the space occupied by sixty four particles of matter: therefore though the atoms should be sentient they cannot receive near the number nor variety of ideas whereof we are capable.

10. Nor is this sphere of presence a novel thought of mine but at least co-eval with Aristotle, of whom it is currently believed that he held the mind, called by him *Entelechia*, co-existent with the whole body, being all in all and all in every part: by which it is plain he apprehended it to be a true individual yet present and perceptive throughout the whole space occupied by the body, for had he thought it a compound it would not have been all in every part but one portion of it in one limb and the others severally in the rest. Indeed this notion of his is generally exploded and ridiculed because he carried the sphere of presence a great deal too far, for we are now assured by experience that when the nerves are any where obstructed in their passage to the brain no sensation will ensue though the external organs continue to perform their office, whereas were the mind actually present in the eye she might discern what passes there notwithstanding any obstruction of the optic nerves within. But the same objections do not lie against me who suppose the sphere of presence

sence to enclose an exceeding small compass situate probably somewhere in the brain, yet large enough to contain many variously modified particles of matter though not large enough to hold the hundredth part of those floating about in our sensory; for which reason we remember much more than we can at any instant recollect, and sometimes have an expression or a name at our tongue's end which we cannot bring out because we cannot draw the particle whose modification is the idea of it into our presence for inspection. And there is another particular wherein I have the misfortune to dissent from Aristotle, for if the entelechia be commensurate with the body it must grow as that grows and contract when that is diminished having a much larger scope in a man of full stature than it had in the sucking child, or if the man lose an arm it must withdraw from the space occupied by the arm. But I apprehend the presence of a spirit incapable of becoming either larger or smaller than ever it was: for as a solid particle of matter must always occupy, so a spirit must always be present in the same extent of space, magnitude in the one and presence in the other being an essential primary property annexed indissolubly by nature to the substance possessing them.

11. Tis true there are insuperable difficulties among our ideas relating to magnitude which whoever delights to puzzle himself with may receive good assistance in the sport from the notes in Bayle's dictionary under the article Zenon. One way by which he disapproves the reality of magnitude is because in all continued motions the moving body perpetually changing its place must be in two places at once, that is, in every instant or moment of its passage, for it never stands a moment still. But to add to the foresaid sport I would beg leave to ask Monsieur Bayle how he knows there are moments of time any more than mathematical points of space or atoms of body, or that a minute may not be infinitely divisible as well as an inch of whipcord or of empty vacuum: which if it may then his argument of the moving body being in two places at once will fall to the ground. These amusements may serve to convince us there are subjects in nature beyond our comprehension, some questions to which the wisest man can give no better answer than I do not know, and to confirm what I have laid down in my chapter on judgement, that absolute certainty was not made for man: yet do they not impeach what was added there, that man is so constituted as to do very well without it, being capable of
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rational moral assurance to the exclusion of all doubt, which is knowledge enough for the direction of conduct and to answer all the uses of life. And since what knowledge we have derives all originally from sensation, that is best to be depended upon which lies nearest the fountain head being drawn from experience by the finest deductions of reasoning. Now constant experience testifies that bodies cannot have different magnitudes, forms, velocities, directions or other modifications at the same time, that while under the same modification they cannot act variously upon one and the same subject, that many of them must have so many several places to exist in which cannot lie in contact with a mathematical point, nevertheless that they act very variously upon us in the business of perception at the same instant and that it is the same Self which receives all their various actions: from whence the sphere of presence belonging to one individual substance follows by a single consequence without that long chain of subtle deductions hung upon one another which must be travelled through before you can discover the force of Bayle's objections, every step wherein still encreases the hazard of an unperceived fallacy. As this notion of an individual substance existent and present throughout a divisible portion of space will be
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made use of upon several occasions by and by I wish it might be maturely considered before proceeding any further : for I do not pretend to infallibility nor desire to lead any man into an error through hastiness, therefore let him not trust to my conclusion but turn over the matter in his thoughts till he has digested it maturely and satisfied himself whether this, which is one of my foundation stones, has a solidity sufficient to bear any superstructure I may hereafter raise upon it.

12. There is one quality more belonging both to body and spirit to which we can neither give a name nor a description, but whereon their vital union together depends. We know that wherever the body goes the mind constantly accompanies it and keeps her station always in the same part of the human frame, but by what power of either this happens we cannot discover. It cannot proceed from solidity, impulse or perceptibility in the one, nor from penetrability, activity or perceptivity in the other, but must be a distinct quality of itself. If I could come into Stahl's notion of digestion and nutrition being an operation of the mind and that she can perform a voluntary act without the least idea of anything relative to what she is about, I might suppose the mind held in junction with the body by her own unperceived volition :

tion: but as I happen not to enter into his sentiments upon that point I cannot take the benefit of them to draw such conclusion. Yet perhaps the junction may be so far owing to the mind as to depend upon the forbearance of her volition, and that she might detach herself at any time had she ideas of the proper manner how to proceed for effecting it: for we may have powers which we cannot exercise for want of knowing them, ideal causes being a necessary preparatory to action. But in our present condition it is fortunate that we have not such ideas, for our perceptions all coming to us by the action of our bodily organs, were we to quit them we might lose all our ideas and so never know how to get back again. Nevertheless it is inconceivable, as we shall endeavour to show in another place, that the mind may stand in a situation to receive perceptions without corporeal organs, and then may join herself to particles or systems of matter occasionally without losing her ideal causes flowing from another fund.

13. The notion of illocality is at least as old as Aristotle but has been continued down to the moderns, for Cudworth declares himself of that opinion: but though he will not allow spirit as such to have any place, he admits it may have one with respect to the
body

body whereto it is vitally united, wherefore he tells us some held that spirit must always be vitally united to some Body or other that it may have a place in nature; which seems to make the very existence of spirit to depend upon body, for I cannot conceive a thing to exist at all which has no place in nature. I apprehend this doctrine of illocality arose from the defining extension a having parts without parts, for those who held this definition could no more conceive a mathematical point in space than in body; therefore whatever had a place must possess some portion of space, which being divisible, so much of the substance as lies in the right hand half of this portion will be a distinct part from that which lies on the left. And that this was Aristotle's way of thinking appears manifest because he allowed a Where to spirit though he would not allow a place; which seems to me a distinction without a difference, for to be somewhere or in some place are in my comprehension synonymous terms. But I do not apprehend the individuality of a substance depends upon the individuality of the space wherein it exists; if we cannot conceive the one without the other it is because our conceptions are taken from the bodies we see, whose divisions always correspond with those of the spaces they

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they occupy: but we must upon many occasions admit conclusions we cannot conceive, therefore our want of adequate conception is not sufficient to overthrow the reasons before given for the individuality of spirit and at the same time its presence throughout a space consisting of distinguishable parts.

14. But which way soever we express ourselves we cannot well appropriate mobility to body nor deny that spirit partakes of the like quality without which there can no more be made a change of Where than a change of Place. While in my chamber this morning I was one where, now I am come down into my study I am other where, this Aristotle must needs grant me: but how I could get either from one where or one place to another where or another place without loco-motion let him that can comprehend it explain.

15. Some have supposed the mind able to move herself by her own energy, which cannot well consist with what I observed long ago that our idea of Operation requires there should be two substances concerned, one to act and another to be acted upon: but waving this difficulty, if the mind has such power we can never know it because she cannot exert it in her present state. We live imprisoned in walls of flesh and bone and like a
snail

snail can stir nowhere without our houses accompanying us : when we walk we act upon our legs which thrust the body forward and that moves the mind along, so that in walking we are as much carried as when riding in a coach driven by our own orders. Nor let it be thought the mind moves herself because in our ordinary movements she goes willingly along with her companion, for this is not always the case ; a man may be pulled forcibly from his seat tho' he resist and struggle ever so much or be ever so averse to stirring, or he may be carried in his sleep when there is no exercise of volition : but in these cases when the body is dragged away the spirit will not stay behind, which manifestly shows it passive to receive a motion it cannot avoid.

16. Since we find a passive loco-motion in spirit we must acknowledge it capable of impulse from body, for body can give motion no otherwise than by impulse ; and that spirit is capable of imparting impulse we know by our moving our limbs. But impulse whether given or received does not necessarily excite perception, for we have none either of the particles vitally united to us or of those ends of fibres whereon we begin our action. Therefore we must look for some other property in body rendring it perceivable, and this we may call perceptibility without which
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perceptivity in spirit would be of no avail ; for to produce an effect there must be an active power in the agent as well as a passive power in the recipient. Whether spirit has the like perceptibility too we can never certainly know, because we can never try the experiment necessary to discover it. If I may be permitted to conjecture once more I should suppose this not a primary quality in body, but resulting from a combination of many particles thrown into particular figures or other modifications, because primary qualities must act uniformly nor could they exhibit that variety of ideas we perceive. Why then may not spirit, by virtue of its indifference either to solidity or penetrability, imitate the like modifications ? Suppose a piece of marble skillfully engraven so as to leave the letters of a word standing out from the rest of the surface, if the marble were laid upon your hand you might feel and understand the word. What then should hinder but that a spirit being contiguous to another might make itself solid in the parts of the sphere of its presence corresponding with the shape of the letters, leaving its natural penetrability in the spaces between, which then might produce the same effect as the marble did upon your hand. And thus spirit, when disencumbered from the shackles
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of matter, may communicate the same perceptions, besides thousands more, that we receive from our organs both of sensation and reflection.

C H A P. VI.

D U R A T I O N O F M I N D.

FROM the individuality and distinct existence of Mind may be inferred her perpetual duration, for the powers of nature can neither encrease nor diminish the stock of Beings; they may throw them out of their assortments and so dissolve the compounds formed thereby, or destroy the secondary qualities resulting from their composition, but what has existence cannot be annihilated and what is one cannot be divided nor can primary qualities essential to the subject possessing them be taken away. Perceptivity and activity have appeared to be the properties constituting the essence of spirit and distinguishing it from other substances: as to what has been offered concerning solidity, extension, locality and mobility, whether it shall

shall be received or no affects us not at present.

2. So far then as relates to the individuality, existence and inherent perceptivity of spirit I may be counted orthodox, but I will not undertake to preserve that character always, for I am now going to side for a while with the corporealists whom I take to have the advantage in some particulars over their antagonists. Nor can this be called a desertion, for I have never sworn implicit obedience to any master but have claimed to use a sober freedom to examine whatever I shall hear suggested from any quarter. I laid down in my general introduction as a reasonable presumption, that the tenets of every sect among mankind must contain a mixture of truth for else they would never have gained credit, because men do not wilfully embrace error but are led into it by unwary conclusions from something for which they have a solid foundation. If such presumption be thought a prejudice, and who can keep perfectly clear from prejudice? it is a more excusable one than that which proceeds from the spirit of opposition. For this engages men to treat an antagonist as an enemy and even to deny him the rights of an enemy, but my propensity to judge the best of every one inclines me to seek excuses for him in the fallibility of human reason which

draws false conclusions from true premises : therefore how erroneous soever I may judge the corporealists in the main, I am better satisfied in discovering some latent fallacy misleading them in their deductions than if I could find nothing similar in their way of thinking with my own.

3. Now the particulars wherein I apprehend them not so grossly mistaken as commonly supposed are these, That sense, thought and reason result from an organization, therefore whatever possesses those faculties must be a compound. No doubt I shall be thought to contradict myself herein, having all along used sentient percipient and perceptive as synonymous terms and contended so strenuously that every substance to which those epithets belong must be one and uncompounded. We have had no occasion hitherto to distinguish between those terms and to have done it while needless would have tended only to perplex and burthen our thoughts ; but I am now under a necessity of making a distinction between percipience and perceptivity, which though a pretty nice one I hope to make it understood. The powers we ascribe to ourselves in our discourses depend partly upon our natural abilities and partly upon the instruments we have to employ : a man may be called a good rider that is expert to keep a firm seat upon the saddle, but

but while marching among the infantry he is no rider at all; or he may be pronounced able to ride a hundred miles in a day if he have strength to support the fatigue, but he is not able to ride twenty without a horse or with a lame one. So when we find a person asleep or meet him in the dark we may affirm of him that he has a very piercing sight if we know his optics are good, yet in these situations he can no more see than the table. In like manner a substance is perceptive that has a quality of perceiving objects upon application of them, yet it cannot perceive without a proper conveyance to bring the impression of objects to it: therefore if it be so placed as that no impression can ever come at it it is no more percipient than any clod in the fields. Thus perceptivity is nothing else beside a bare capacity in the subject to receive perceptions when excited, but sense or percipiencē is the standing so circumstanced as that the impulse of objects striking upon us may be transmitted so as to raise perceptions: and this requires an organization which implies a compound of many parts, for I can no more see without eyes, hear without ears, nor meditate without organs of reflection, than I could without a perceptive spirit to receive the notices transmitted thereby. What notices a separate spirit might receive from

other substances accidentally approaching it I need not now enquire, for all the percipients we have any knowledge of being vitally united to some organization and their perceptions depending thereupon, we may safely pronounce all the percipients we know to be compounds.

4. And the case is plainer with respect to the faculties of remembrance, consciousness, reasoning, judging, dividing, comparing and all other modes of thinking: for we cannot remember or be conscious without inspecting the records lying in our memory, we cannot judge without a discernment of something distinct from that which judges, in reasoning we employ our organs of reflection to bring the proper materials before us for our contemplation, and when we divide and compare there must be something within us exhibiting the objects wherein we observe a difference or similitude. Therefore those who define the mind a thinking substance necessarily make it a compound whether they discern the consequence or no, for cogitation cannot be performed without the command of certain instruments to bring ideas before us for our inspection, to change, to marshal, to separate them, and trace their connections or relations from one inference to another. For this reason I remarked in the chapter of sensation
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that Mind was an equivocal term used to express two very different things, which I called the philosophical and the vulgar mind, though I cannot help acknowledging that men of thought and learning for the most part understand it in the vulgar sense or rather confound both together. The former I take to be a pure uncompounded spirit endowed with perceptivity and activity but incapable of actual perception or action without an organization suited to its purposes: by the latter I understand this same spirit together with so much of its organization as is concerned in the business of thinking and reflection, which must be a compound consisting chiefly of corporeal parts separable from one another and all of them from the spirit where-to they are united. In this mind our faculties of reason and memory, our knowledge, our talents, our habits, our passions, our sentiments, and whatever else distinguishes the characters of men reside: and this mind I apprehend to be the same with what is commonly called the human soul.

5. If any shall take offence at my making the soul compounded, dissoluble and perishable, let them consider it is not I who make it so but themselves by their application of the term: for words are meer arbitrary signs, capable of taking any signification that man-

kind shall agree to put upon them. Were I left to myself I should apply the name of Soul, to our spiritual part alone, and shall do so sometimes where the matters I handle will admit of it; and then after all that has been delivered already nobody can suspect me of holding it perishable. But the misfortune is that men in their division of body and soul do not make the separation clean, but take in some finer parts of the former into their idea of the latter, as appears manifest by their ascribing faculties to it which cannot subsist without an organization: for a naked spirit is no more a thinking substance than it is a walking substance, it can indeed think whenever joined in composition with proper organs of reflection, and so it can always walk in composition with legs and crural muscles. Thus after the usual division of man into body and soul we may again subdivide the latter into organization and spirit; but this subdivision being not ordinarily taken notice of, the term Soul becomes applied indifferently either to the perceptive spirit or to the whole percipient containing that in conjunction with its system of reflective organs. While men remain unsettled and variable in their notions of the soul they must not blame me for speaking of it in a manner they do not like, or that seem contradictory to what I have
have

have spoken concerning it at other times, for this will unavoidably happen so long as in compliance with custom I am obliged to vary the idea belonging to the term. So then the question concerning the corruptibility of Mind or Soul is a question of language rather than of fact, and may be truly answered Ay or No according to the different senses wherein you understand them. And the like question capable of contrary answers may be proposed concerning Person: who does not acknowledge himself mortal, that he was taken from dust and shall crumble into dust again, and in a few years shall be no more; we hear such expressions used every day and they are justly used while we consider our whole human frame as ourselves. But in our seasons of abstraction when we restrain Self to the spiritual part we change our tone, for then we claim to be perpetual, unperishable and unchangeable, to flourish in immortal youth unhurt amidst the war of elements, the wreck of matter and the crush of worlds.

6. Thus in dispute upon the nature of the soul, while it was defined a reasoning, thinking, sentient substance the corporealists seem to have had the advantage. For issue being joined upon its simplicity or compoundness, it seemed admitted on both sides that if compounded it was Material: therefore finding

it uncontroverted that every compound must be made up of matter and being unable to conceive the faculties of reason thought and sence residing in a simple substance, they were not quite absurd in concluding the soul to be no more than a very curious assortment of corporeal particles. But if we take along with us our foregoing distinction between percipience and perceptivity we may admit a sentient composed of unsentient parts yet deny that such composition could consist solely of matter but must contain one perceptive ingredient to receive the notices brought by the rest. For if a grain of sand were placed where the spirit resides in the most exquisite organization that can be contrived, there would be no more thought or percipience in this compound than there is in the Venus de Medicis.

If any one shall still make a difficulty in distinguishing between a capacity and a power of perceiving let him consider whether he does not apprehend a difference between a blind man and one with good eyes shut up in a coal hole: both lie under an impossibility of seeing yet both have not lost their sight. When Ulysses stopped the ears of his crew with wax on sailing by the Sirens, he did not destroy their sense of hearing though he put it out of their power to hear the enchantments,

ments. And a strong man bound hand and foot becomes unable to stir, yet retains his vigour and natural ability to move. So a spirit may retain its perceptivity, that is, capacity of receiving perceptions whenever excited, after losing its percipience or power of perceiving by being removed from every thing which might bring objects to excite them.

7. Having satisfied ourselves that our spirit or soul, if I may give that appellation to the spiritual part singly, shall have a duration beyond all the powers of nature to cut short, our next step will be to examine what we shall carry with us upon quitting our present habitation: and we can assure ourselves of no more than our two primary faculties of perceptivity and activity which being inherent in our constitution nothing can divest us of. But these will avail us little of themselves, for we shall neither be able to perceive nor act without something added thereto furnishing ideas for us to perceive or materials for us to act upon. Therefore the knowledge of our perpetual duration and perceptivity affords us no light to judge of our condition hereafter: we know that we shall continue existent and capable of receiving perceptions, but what perceptions shall
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accoft us, whether thofe of pleafure or pain, of fagacity or dulnefs, or none at all, we are utterly ignorant. Nor can we tell that our percipience fhall remain, nor whether we may or may not carry with us that part of our organization wherein our faculties of reflecting, judging, thinking, reasoning refide. After what has been faid of the extreme divifibility of matter it appears poffible that we may have a compleat fystem of organs within us fo fmall as to elude all our obfervation, too fine to be difcerned when going or to be miffed when gone : fo that notwithstanding all the appearances upon death and though the carcass feems to lofe nothing of its weight, there may be a little body compofed of members fitted for fenfe and action which flies off unperceived. But fhould this be the cafe and fhould our fenfitive and rational faculties accompany us, they may be reduced to bare capacities without power of helping ourfelves to a fingle idea unlefs fome foreign aid fhall befriend us. For we have feen in the progrefs of thefe enquiries how the mind in her acts of recollection, of reasoning, of habit and paffion communicates with the animal circulation : how know we then that fhe can perform her operations at all when feparated therefrom ? We find ourfelves more or lefs
ready

ready at those operations according to the disposition of our body, and when the communication is cut off by fits or sleep we cannot perform them at all. Therefore it is not impossible that the causes bringing us all our ideas may reside in the grosser parts of our body, that upon parting from them we may lose our remembrance, our knowledge and all our acquirements, and pass into another state as much a blank paper as ever we came into this, capable of taking any writing that shall be marked upon us but having all that was written before quite erased.

8. Or it may be that our whole material frame shall be dissolved and the spirit fly off naked and unattended by any organ, yet retaining its perceptivity we know not how it may be affected by any corporeal particle coming into contiguity or entering the sphere of its presence. Some have asserted that our perceptions are excited, not by animal spirits or fibres but by vibrations of ether pervading their interstices: if this be true we shall not want for ether wherever we go, but how the stronger vibrations of ether at a distance from gross bodies shall affect us we are utterly at a loss to guess. Neither can we be assured concerning the perceptibility of other spirits, whether they may exhibit ideas to one another,

ther, whether such operation be necessary or voluntary, nor how they may stand disposed either to comfort or torment us.

9. In either case our condition will be determined by the objects accosting us and company we fall into. We are here luckily situated in an organization enabling us to help ourselves to the conveniences and enjoyments of life, but when turned out of this we know not where to find such another nor how to get into any other at all. Though surrounded with dangers on all sides we have sense and experience to avoid them, but when divested of our sense and experience we may be like a blind man turned out into a crowded street, having nothing but chance to direct our steps, insensible of mischiefs before they fall upon us and unknowing which way to escape them. We may be tossed about among the elements, driven by streams of air or whirled round in circles of fire, the little corpuscles of light may hurt us and the ether tease us with its continual repulsion: in short we have every thing to fear and little to hope for. Thus the discovery of our durable and perceptive nature affords no comfort, for while we confine our contemplation to that the prospect lies dismal dark and uncertain before us. Let us then turn
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our thoughts upon external nature in order to discover what rules and powers there may be governing that, in hopes of learning something how they may affect us and in what manner we are likely to be disposed of.

C H A P. VII.

EFFECTS AND CAUSES.

THOUGH we are all convinced of our short continuance in this present state we are well satisfied that the course of nature will not be interrupted by our departure : the Sun will still rise and set, the tides ebb and flow, the trees continue to bear their fruits, the cattle to multiply, the earth to yield her encrease and the business of mankind to go forward after we are dead and gone. But the contemplation of these things gives us no instruction how to provide for our future accommodation nor furnishes us with any light to discover what accommodations may be provided to our hands. Shall we heap up riches? those we must leave behind, or could we carry them with us our money would not pass current in the other world.

world. Shall we plant gardens or breed up numerous flocks? their produce will not suit our digestion. Shall we raise a family or spread our fame amongst mankind? we may not remember our own names nor have an intercourse with the living to know what they say of us. Shall we improve knowledge and cultivate the sciences? our ideas may be totally different and our sciences unintelligible to us. Shall we rectify our dispositions of mind and lay in store of virtues? these are habits wherein the animal circulation is concerned nor can we be sure they shall continue when that is removed from us. Shall we be careful to nourish the little body that is to serve us for our next habitation, to invigorate its limbs and quicken its organs? we know not where they lie nor what we can do to improve their growth. And as we can do nothing of ourselves so neither have we assurance of anything that will be done for us: we know not what nests shall be provided to hatch us into life, nor what parents we shall have to protect our tender infancy and teach us the learning necessary for our conduct; what sustenance the air may afford, or where to find it, or whether we shall want any sustenance at all; what variations of weather may prevail in the ether answering to the pleasing warmth of a vernal sunshine

shine or the storms and inclemencies of winter, nor how to shelter ourselves from the latter. The subtile fluids causing gravitation, cohesion, electricity and magnetism may strike our new senses instead of lights, sounds, flavours and odours and fill us with agreeable or troublesome sensations. We may meet with different species of animals proportionable to our size, answering to ravenous birds and beasts of prey or such as serve for our uses in life. We may fall into societies of fellow creatures among whom we may find friends and enemies, who may give mutual delight by their conversation or vex one another with their contrariety of tempers and opposition of interests. Since then we can find nothing certain by considering the constitution of particular things let us search for the general laws prevailing throughout all nature: for perhaps we may see that their influence must occasion some resemblance or similar tendency in the municipal laws of the several regions of nature, and we may discover some methods of conduct whereby to put ourselves in a situation to receive benefit and escape damage from that influence. But as those laws depend upon the causes operating in the productions of nature, we must endeavour to investigate the causes from their effects

effects discernible to our senses or discoverable by our reason.

2. We may distribute our prospect of nature into three parts, primary qualities, motion, and situation, which concur in every operation we see or can think of. When a cannon ball dashing into a heap of sand disperses it all about, the situation into which the particles are thrown follows from their several situations in the heap and the contact or propinquity of the ball when striking, from the violent motion wherewith it struck, and from its solidity to give and their own solidity to receive an impulse. So the growth of plants is owing to the near situation of nutritious particles in the earth that bears them, the position of their little parts in fibres and tubes fitted for containing the sap, to the action of Sun and air, and to the properties of matter whereon that action depends. Nor is the case different with respect to the acts of free agents which cannot proceed without a close situation of that which is to be the subject of their action or object of their perception, nor could their organs take a different modification whereby to exhibit different ideas without a motion in their parts nor could anything be perceived or done without perceptibility and mobility in body or perceptibility and motivity in spirit.

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And there are three causes commonly observed in the phenomena we see, Chance, Necessity, and Design. When the wind drives about the seeds of thistles they fall in particular spots by chance; where they light the peculiar contexture of their parts makes them necessarily produce plants of their own species; and when we cultivate and dress our ground, sow our corn, keep it weeded and harvest it, we proceed by design.

3. I shall begin with the consideration of motion without which the courses of nature cannot be carried on: but this we may satisfy ourselves is not a quality of body, which is a movable but no more a moving than a quiescent substance, being alike indifferent to either state and continuing in either until put out of it by some foreign force. We see bodies moved by other bodies striking or shoving against them, but the mover gives no more motion than it had itself before and always loses so much as it has imparted to another. And though motion sometimes seems to proceed from the pressure of quiescent bodies, there is always some external impulse occasioning the pressure: for two bodies meeting with equal force in opposite directions, after having stopped one another, will lie for ever close together gently touching but not pressing each other unless something

pushes or strikes against them on the outside. Tis true we see motion frequently produced without discerning the cause, but then experiment and reason assure us that bodies never produce motion but only transmit it by an impulse arising from their natural property of persevering in a motion once received. Thus while we confine our thoughts to matter it will appear that every motion is the product of some preceeding motion transferred from body to body and incapable of increase by the translation. That there is an inexhaustible source of impulse somewhere, though undiscernible by our senses, we may rest assured when we consider the dissolving power of menstruums, the violence of fire, the strong contraction of our heart and arteries, the stability of heavy masses held down by gravitation to the earth, and the firm cohesion of metals: all which must have some prodigious fund we know not where to find from whence to derive the force they exert. It seems not improbable there may be streams of a most subtile matter much finer than ether itself darting incessantly along in all directions with inconceivable velocity: that the solid parts of quiescent bodies lie in the spaces between these streams, which likewise throw and preserve the atoms in their longitudinal position of wire before supposed, that
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upon the touch of fire thrusting any of the particles aside into the stream it dashes them about against other particles driving these likewise upon other streams and so causes that explosion we find in gunpowder. Just as if an army were marching briskly along in very wide ranks, another army in like loose array might march quietly between them: but if a few men were pushed into the others ranks it would cause a violent commotion and tossing to and fro among them. We may help ourselves a little in this idea by considering a cube of glass hung up between candles on all the six sides of it, the rays would pass continually through without being stopped by the glass or jolting against one another; and this whether the glass remained still or were swung to and fro: but if by a smart blow the parts of the glass were to change their position forming a multitude of little cracks it would become opaque and not afford them a passage, in which case if the streams of light were strong enough they must rend the glass into atoms and keep buffetting them about until by frequent tossings they had brought them to lie in the interstices between themselves.

4. It may seem at first sight impossible that such streams of subtile matter should be able to run in all directions without stopping

or jostling one another : but let us consider that we find by experience the same thing happens in the passage of light. Hang a multitude of candles round the room and you shall be able to see any one of them distinctly thro' the light of all the rest. The stars scattered about in all parts of the upper hemisphere find their way to our eyes, but they must traverse many miles of thick solar radiance before they can come to that shadow of the earth which makes our night : and their rays falling upon my eyes must cross those falling upon the eyes of other persons a mile around me in a variety of angles : yet all this without any stoppage or deviation from their course, for if they were at all affected by the other rays they pass thro' it must cause perpetual refractions and we should see them dance about like so many Will i'the whisps. But what makes the difficulty in this case is our conceiving the rays of light to be so many continual streams like those of water, the parts touching close upon one another, whereas it has been observed in CHAP. III. that the corpuscles composing a ray of light may possibly keep a distance of a hundred sixty miles behind the next preceeding them, tho' they follow so exceeding quick that we think their impulse upon our optics continuous. Now the particles of subtile matter, being
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much smaller and swifter than those corpuscles, their bulk may be estimated to bear an infinitely less proportion to the spaces between them than a ship does to the length of one hundred leagues. Let us then imagine ships to sail from every port in Europe to America and others from every port in America to Europe, each ship a hundred leagues behind that which parted last from the same port and their courses be ordered in such manner as that they should cross over one particular spot of the ocean: those ships would so rarely fall foul of one another as to make no perceivable interruption in commerce; why then may not the little particles be allowed to collide so seldom as to cause no disturbance or interruption in the courses of nature.

Another difficulty springs from the extreme minuteness of those particles which can hardly be thought capable of holding bodies together in such strong cohesion as we experience in metals: but let us remember that the momentum given by all mechanical powers is found by a compound ratio of their quantity of matter and velocity, so that any deficiency in the former may be made up by a proportionable encrease of the latter. Nor need we wonder that very small agents should produce great effects since we know that the burst of a cannon will shake a whole street,

but the particles of air giving immediate impulse to the houses can scarce be supposed to weigh many grains. The like appears in explosions of gunpowder where the quantity of matter operating is a very trifle in comparison with the heavy masses it raises and compact bodies it rends. I shall only remark further that this subtile matter, being the cause of gravitation cohesion and repulsion in other bodies, can neither gravitate nor cohere nor repell itself, because it will want a prior cause to give it those qualities: nor has it other power than that of impinging like a stone, by virtue of the prodigious velocity wherewith it darts along. Nevertheless we may count it the *primum mobile* or first material agent in all the operations of nature, as driving her two main wheels of attraction and repulsion, from whence all the lesser works, the power of salts, acids, alkalies, of fire, fluids, electricity and magnetism, circulating vessels of plants and animals spring, glues and menstruums derive their activity, according to their several structure and position of their parts fitted to turn the motion of those principal wheels upon them. Nor is it hard to conceive how two bodies may be made to attract by the action of this subtile matter, because they must cover each other from so much of the stream as they receive themselves

selves which would else have fallen upon the nearest sides of the others, so that this force being wanting to ballance that on their opposite sides they must necessarily be driven towards each other. Then those streams which fall very obliquely, like a cannon ball bounding from the ground, will drive off other bodies lying at a certain distance, from whence arises repulsion, which cannot take place between bodies too near together because in that situation they cannot receive a very oblique rebound for it must pass beside them. This likewise accounts for the inequality between the two attractions, that of cohesion being found stronger than that of gravitation because bodies cohering have the whole force of attraction without a competitor to keep them together, whereas those at a distance repel as well as attract, so that their gravitation is no more than the difference between those two counteracting forces.

5. But wherever the sources of this fund may lie or how copious supplies soever they may contain they cannot for ever answer all demands made upon them. We see bodies continually strike against one another, and when they do so, if not elastic the motion of both ceases, or if elastic, the force whereby they rebound must be drawn from some such fund as that abovementioned: every time a

man claps his two hands together he takes something from the stock of motion which is to carry on the operations of nature. But the collisions occasioned by human action are very trifles in comparison with that great quantity of force spent by nature in all her works: the bearing of rivers against their winding banks, the dashing of seas against the shore, the opposition of winds from one another or from mountains, the systole or contraction of circulating vessels in animals and plants, but above all these the gravitation of bodies to earths and suns, the cohesion holding the little particles of compounds together, the opposition of centripetal and centrifugal forces keeping the planets in their orbits, the repulsion of air and ether, must make a vast consumption of motion every moment. So that the largest stores of force we can suppose nature once to have had must have been long since exhausted, as being subject to perpetual diminution without any means of recruiting: and all matter must have been reduced to a state of quiescence by this time, unless perhaps some few straggling atoms which might move about in spaces where they should meet with nothing to obstruct them.

6. Yet though the corporealists can find nothing to renew the decays of motion, we who claim motivity as an essential property

ty of our own may fancy we find it in the action of spirit. Now should this be thought to serve for restoring motion it could not serve for beginning it at first: for we do not act without causes as well final as ideal, wherefore the activity of spirit is set at work by the perceptibility of matter and the modifications it falls into by the motion of its parts presenting us with the motives and guidance of our proceedings. For if nothing moved without us we should have no ideas brought us to perceive, and without perception there could be neither inducement to exert our volition nor direction which way to turn it. So that upon either hypothesis we must needs adhere to our former conclusion, that every motion is the consequence and effect of some preceeding motion and that it must begin in matter before it can be produced by any such spirits as we have experience of.

7. And the like may be said of situation which follows constantly from some preceeding situation. Matter is generally held homogeneous and that infinite variety of forms constituting the essence of bodies falling under our cognizance depends upon the structure and order wherein the parts of them are placed. So that the same first matter makes a stone or a metal, a plant or an animal or-
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ganization, according to the position wherein the several individuals of it are ranged. Thus all secondary qualities arise from order, neither a clock nor a tree would be what it is nor could perform its proper functions if the wheels or the fibres were placed in any other manner than they are : the faculties of sense thought and reason could not subsist unless the spirit resided precisely in that spot whereto all the organs of sensation and reflection tend ; and the modifications exciting our several perceptions vary according to the position wherein the component parts of our organs lie. And that particular forms of order generate one another we may be satisfied by the growth of vegetables, where the peculiar structure of the seed causes it to produce a plant of its own kind : and the structure of plants occasions them to yield flowers and fruits of various shapes, hues, odours and tastes. In these things we are ready enough to acknowledge an order, but as has been shown in CHAP. X. of the last volume, we do not so easily admit it in positions not corresponding with our trains of imagination : nevertheless it has been made appear there that strictly speaking there is no such thing as disorder in nature, for every number of particles must lie in some situation with respect to one another and that is their order however irregular

gular it may seem to our apprehension. Nor are those apparently confused positions unfrequently serviceable to produce what we call order, for the particles nourishing a plant lie undistinguished in the earth, the air or the vapours, yet they must have an apt position there or the plant could never draw them in to contribute to its growth. Thus in particular things their order does not depend solely upon the order they had before but partly upon other things which are or may be brought contiguous to them or mingle among them. But the Universe, having nothing external, must receive its order continually from that it had in every preceeding moment; so that if the position of all substances could be known precisely at any given point of time, it might be determined from thence what position they would take at any time hereafter. For if it were known how the air, the mountains, the burning sands, the frozen seas, the subterraneous vapours and other causes affecting the weather stand disposed, we might prognosticate what weather it would be tomorrow or this day twelve-month. Nor would the action of free agents disturb the calculation in changes of position wherein they are concerned; for if we could ascertain the exact situation of objects surrounding them and structure of their organs,
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we might foresee what modifications these organs would fall into, what ideas and motives they would present and consequently how those agents would act and what alterations they would make in the position of bodies within their reach. But then in calculations of this sort the article of motion must not be left out of account, because it is that which generates one order out of another: nor is it enough to know the quantity of motion in the whole but likewise among what particles it is distributed and in what direction each of them proceeds, for it is obvious that the same motion in different directions must produce very different figures.

8. Secondary qualities resulting from the order wherein the substances forming a compound lie situate are continually destroyed and renovated according to the changes made in that order by motions of the component parts. But primary properties belonging to individuals admit of no change, for what has no parts cannot have an order of parts: therefore these properties being not generated by motion or situation must remain constantly the same in the subjects possessing them. Body will always continue solid and spirit perceptive whether in motion or at rest, whether in this part of the world or any other, whether contiguous to other substances
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or separate from them all. So that primary properties spring from no assignable cause among the powers of nature as motion and situation do from former motions and situations.

9. But the inquisitive mind of man looks for something further to account for the different properties of individuals; we find spirit active and perceptive, matter inert and incapable of sense, or should we fancy the atoms sentient, it has been shown the sphere of their presence would be less than that of ours: tis natural then to ask why there should be such a difference in substances? why they are not all homogeneous and primarily alike? And these properties being inherent in their nature and inseparable from them must be as old as themselves and consequently whatever occasioned the difference between them must have been the foundation of their existence. Nor will the mind be satisfied without a reason limiting the quantity of matter existing: there is no impossibility or absurdity in its being double or treble or decuple to what it is, for there is abundant room for multitudes of atoms more in the empty spaces between those already in being.

10. Neither will there want the like questions concerning motion and order: for it will scarcely satisfy to tell us that every motion

tion and situation follows from a prior, that again from the next preceeding, and so backwards throughout all eternity; because if we contemplate a series of changes following one another there will arise an order of succession as well as of position. In the effects we see produced things pass out of one form into another through several intermediate changes: a seed cannot produce the full grown tree at once, but first shoots up a tender twig, which then becomes a sapling, a waiver, a tellar, and at last a perfect oak laden with acorns: a fetus grows through the stages of infancy, of childhood, of youth unto the full maturity of manhood: and these gradations in the several productions of nature may be called their order of succession. Now if the situations of all the substances in the universe have followed one another for ever, there must have been an eternal order of succession prevailing throughout: but if it should be asked why some other succession might not as well have prevailed eternally, what shall we answer? for I know of no natural repugnance in things against taking any position or series of motions, but their changes might have succeeded for ever in a manner quite different from that they have done. Besides there are some positions which never generate any others,
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and consequently produce no order of succession at all. Lucretius's atoms falling perpetually downwards with equal velocity could never have changed their order without his whim of a declination, for which there is no foundation either in experience or reason. Actual motion is not essential to any substances we know of, which therefore might all have remained eternally quiescent in their several stations: or if we will needs suppose them to move it is most natural to conceive them all moving with the same velocity and direction, in which case they could perform no more feats than the Lucretian atoms. Therefore it remains to seek a reason for their having an eternal motion rather than an eternal rest, or for their escaping those unavailing similar motions which could produce nothing, and for their having eternally taken different directions, from whence flows that order of succession we call the course of nature.

11. Another question may arise concerning Time, why such a particular point of it must be the present. To day must follow yesterday and precede tomorrow, this I know very well, but how know I that yesterday to-day and tomorrow might not have been long since past, or that they might not have been yet to come? Can we fix the beginning of
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eternity and compute how many ages have lapsed since then, so that the year 1761 must necessarily be the present year? That year follows year and the second preceeds the third there is no dispute, but why might not the whole course of time have been anticipated or retarded, so that it might now have been the reign of Henry I. or George X. instead of George III? We shall look in vain for a solution to this question in the properties of substances, the effects of motion or the results of order.

12. Neither can we learn anything from them to determine the original stations of particular substances in the universe whereon all their succeeding ones depend, which we shall want some cause to assign them. We may think this not worth enquiry with respect to matter, for it is all one whether particle A lie in the east and particle B in the west or the contrary, the course of nature will go on the same for either particle will answer the same purposes in either place: but with respect to sentient Beings it is very material, for had I been stationed in some distant planet and some other spirit here in my room, though the course of nature and business of mankind would have proceeded just as it does, yet my own lot might have been very different: I might have had en-
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joyments now out of my reach or fa'n into disasters I now know nothing of. This consideration may put us upon searching for a reason, not only why all nature wears the form and follows the order of succession it does, but why each particular substance possesses its own place in that order and has not the place of any other.

C H A P. VIII.

CHANCE NECESSITY AND DESIGN.

TH E S E three have been severally assigned as the causes producing that order we observe in nature, and as they convey very different and opposite ideas we shall consider each of them apart. Some have laid great stress upon chance as being the original giving rise to the other two by strewing the particles of matter throughout infinite space and throwing them into combinations from whence the secondary qualities of compound necessarily result, and forming others into an organization rendering them capable of thought and design. And in our common discourses we speak of Chance or Fortune as a power

influencing the affairs of men and having a principal share in the direction of all events : this is thought frequently to baffle the skill of the wise, the valour of the brave and strength of the mighty, to turn the scale of victory and determine the success of all enterprizes. But if we examine the proper idea of chance we shall see that it is neither agent nor power nor has any other existence except in our own ignorance, but whatever is ascribed to that we might see performed by other causes if we had sagacity to discern them. Even in games at cards and dice we deal the one and throw the other ourselves and both fall out according to the motion and position we have given them : but as we are not so perfect masters of our motions as to know exactly what they will produce, it is this uncertainty that makes the chance ; for there are persons who have learned to pack the cards and cog the dice, and with such there is no chance what hand or what cast will ensue. It is remarkable that we sometimes know the exact proportion between our knowledge and our ignorance which enables us to calculate chances with a very great nicety : but if there were a person who could discern minutely the little inequalities of the table you throw upon, the roughnesses of the box, the vigour of your arm, the degree of confidence or distrust with which
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you throw, and all the ideas rising in your fancy, he would make an other guised calculation than our common gamesters. Therefore chance is relative, being greater or less or none at all according to the degree of knowledge in different persons: an event of which there is very little chance to one man may be probable to another and inevitable to a third according as each stands in a situation to discern the causes operating to produce it. To him that sees two hands at whist there is less chance on which side the odd trick will fall than to the players: if he look over all the cards he may still give a shrewder guess; and if he knows exactly each person's manner of playing he may compute without hazard of a mistake how much will be scored that deal.

2. What is done cannot be undone, therefore a power once executed ceases with respect to that particular event, wherewith it has no longer any concern: whence we may learn that the power of fortune is only ideal, because in many cases we suppose that remaining after determination of the event imagined to depend thereupon. When a merchant risks his all upon a venture to some distant part of the globe we say he puts himself under the power of fortune because the casualties of winds and seas, of fire and

enemies are supposed to lie at her disposal : but what if this merchant sells his venture to another after the time lapsed in which the ship must have succeeded or absolutely failed in her voyage but before any news of her can be arrived home ? does not the purchaser put himself as much under the power of fortune ? But if fortune had any power during the voyage she has executed it and has nothing more to do, nor is there any chance of the success falling out otherwise than it has fallen. Nevertheless because we know not the event we still apprehend ourselves under the power of fortune : for when advice comes of the ship being arrived safe, the cargo advantageously disposed of, and the money deposited in safe hands, then and not before we conceive the power of fortune determined and ourselves secure against her caprices.

3. Thus chance is no cause of anything but serves only to express our ignorance or uncertainty of the manner in which other causes operate, therefore may be properly applied to the most cogent necessity or most deliberate design where we know not the tendency of the one nor purpose aimed at by the other. What is esteemed more casual than weather ? yet nobody doubts of the air moving, the vapours rarefying or the clouds
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condensing according to a certain impulse received from mechanical causes : but because no mathematician nor naturalist can investigate those causes so as to calculate what they will produce, therefore we say the farmer depends upon chance to bring his corn to maturity and give him a favourable season for harvesting it. So likewise to us who are not in the secret it may be matter of fair wager whether the council will sit on such a day, whether they will send more troops to Germany or agree to a cessation of arms, nor would the chances alter though the whole wisdom of the nation were to be consulted in determining these points : and if our stake were very considerable we should as much put ourselves under the power of fortune as if we had ventured upon the cast of a die, or a lot drawn by a child, or the choice made between two crumbs of bread by a sparrow. So then an event happening by chance does not elude the operations of necessary causes, nor the acts of free agents, nor the provisions of wisdom, for the effects of all three will be casual so long as we cannot foresee them. And though it must be acknowledged that fortune has a great influence upon all our affairs, no more is to be understood by this expression than that we know not what

causes are in act around us which may affect the success of our measures.

4. It is not uncommon for words to take a little different signification according to the phrases wherein they stand: tis one thing to say there is a chance of an event falling out so or so, and another to say it was an effect of chance. How ready soever you and I might be to lay a wager upon the meeting of the council as deeming it a casual event, we shall never think the members meet together by chance, taking it for granted they have some reason either for going or staying away. So if we see a mathematician busy in drawing figures upon paper, though we may offer to bet with one another whether he make a circle, a parabola or a parallelogram next, we shall hardly imagine he constructs his schemes by chance. So likewise if lightning falling upon an oak should tear it into shatters, tho' it fell by chance upon that particular tree, there was no chance against its rending asunder whatever it should light upon, nor was there any chance of its not bursting from the clouds when the air was in a disposition to produce it. Since then among events we cannot foresee we distinguish between those happening by chance and those which do not, it will be proper to examine what we understand by this distinction. In effects produced
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by necessary agents we esteem those casual which depend upon other causes besides what fall under our cognifance: when we fee water poured upon a rifing ground we know it must run downwards by its natural gravitation, but into what streams it may divide or in what meanders it may wind is casual because depending upon the inequalities of the ground and obstacles lying in the way, of which we can take no accurate account; but still there must be water poured and gravitation pulling downward or no stream or meander could enfue. In works of design it is common for other effects to follow besides those intended: a man walks along meaning only to get from one place to another but in his passing he treads upon a snail, this is casual because he had it not under contemplation nor was it any part of his design, but he must have had some purpose in view or he would not have walked at all and the snail remained safe. So then in both cases chance has no place unless there be some agent at work, some power in act, from whose operations chance may produce something that was unforeseen or unthought of. Therefore those who pretend the world was made by chance, or assign that for the beginning of all things, talk absurdly; for there must always be something in motion previous to

chance, nor can this begin until there be causes operating of which it may be a chance in what manner they will operate. Besides if we consider the source of chance itself we shall find it always arise from the situation of things which may interfere with those at any time under contemplation: for upon seeing a body move or knowing the purpose of a free agent there is no chance what will ensue supposing all obstructions removed: but we have seen in the last chapter that every situation follows upon a preceeding situation, therefore if we could know compleatly the motions, the purposes and situations of all substances in the universe, we might learn from thence the order of succession and should see there is no chance of anything that could happen.

5. I proceed next to Necessity, with which I shall have less to do as being a more stable term appropriated chiefly by the studious and so not subject to the usual variations of vulgar language. Our idea of necessity we take from the action of bodies, which have no force of their own but transmit that they have received from one to another: even resistance although inherent in body can effect nothing without an external impulse. So that necessity cannot be assigned for the origin of things, because itself must have a beginning

ginning in the previous condition of things from whence their operations may be necessarily inferred, for no effect is necessary until there are causes at work fitted to produce it: therefore necessity is at most but a channel of conveyance transmitting efficacy from cause to effect, and even this purpose it will not answer compleatly having no fund to repair the loss of motion continually occasioned by the collision and pressure of bodies. We may then admit this as one of the laws by which nature preserves the tenour of her course but can by no means employ it to account for the present order of succession, be it eternal or no, taking place preferable to any other or to those unavailing situations which could have produced no succession at all.

6. Nor shall we find less difficulty with Design such as we have experience of, for reason requires materials to work upon and intelligence cannot subsist without objects previously existing to be understood. Something must suggest the design and present ideas of the means tending thereto before we can enter upon the prosecution. So that what power soever spirits may have to renew the perpetual decays of motion and carry on the order of succession, their action cannot account for there being such an order: because there must have been some previous situation

situation of matter before that action begun, exciting perceptions which gave occasion to their exerting this power.

7. And as we have found these three causes insufficient to account for the order of succession in the situations and motions of things, so can they as little account for that third part of nature the primary properties of substances: for those are not the consequences of prior properties or positions but co-eval with the subjects possessing them. They cannot spring either from necessity or design to both which they gave birth: for the necessary agency of matter results from its solidity and inertness, as design does from the perceptivity of spirit; and chance lies still further remote having no place until necessity or design have begun their work. Neither will the contemplation of these causes furnish us with an answer to the queries before proposed concerning the course of time, why it might not have run earlier or later than it does: nor concerning the particular stations of sentient Beings, why each possesses the place it holds among the whole number and so receives that series of perceptions which might as well have fallen upon another standing in its room.

C H A P. IX.

THE FIRST CAUSE.

THUS having examined all the powers and properties of nature so far as they fall under our cognizance and observation we find that the contextures, qualities and operations of particular things follow from prior situations and motions, these again upon others preceeding, and so on without limitation in a continued chain, whose links we cannot number and whose length we cannot measure. When we endeavour to account for the whole chain, whether finite or infinite, hanging in such a particular manner rather than any other, or being connected in links at all, and consider the general causes hitherto assigned for that purpose, we find them ineffectual, as taking their rise from the positions and qualities of substances before existing and therefore themselves the effects of some preceeding cause. When we reflect on the different primary properties of substances which are essential to them and inseparable from them and yet require a reason occasioning the difference, we must conclude that the cause which made that difference
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gave them likewise their existence and at the same time appointed them their several stations; for these too require a cause, every station being naturally indifferent to receive any particular substance equally with any other, and each substance having had some station in every point of its existence. But this cause we have no direct knowledge of as we see none of its operations; wherever we look around us we discern nothing at work besides chance, necessity and volition: neither our senses nor our thoughts can pierce to the end of the chain, nor can we contain the whole of it in our imagination: we have no remembrance nor experience of an existence given together with primary qualities, nor of a substance which had no place in nature first taking its station. From whence we may rationally infer that all the causes operating to produce the phenomena within our notice are themselves effects of some prior cause, of which we can know nothing more than may be gathered upon the evidence of those effects.

2. There is not a more evident truth or more universally acknowledged among mankind than this, That nothing can produce nothing: therefore if there ever had been a time when there was no Being in nature there could have been none now, and the bodies
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we daily see and handle are an irrefragable evidence to us that something has existed from all eternity; because either they themselves did so or they were called into being by what was existent before them and had nothing prior to itself. Thus we must needs acknowledge there is a Being somewhere existent without a cause, for till we find such a one we shall have no cause whereon to found the existence of other things: and such we safely assign for the First Cause of all existencies, modes of existence, properties and order of succession in the universe. To this species of existence we commonly apply the terms Self existence and Necessary existence, rather for want of properer than for their being fully expressive of the thing understood by them: for self existence literally implies something that was not but assumed a being by its own power, than which no imagination can well be more absurd: but we mean by the expression a Being underived and unproduced either by itself or any other, or in other words, existing perpetually without a cause. I will not undertake to expound the term Necessary, having but a confused idea of the import it carries in this place: it cannot mean a Being that has no power to lay down its existence: for in this sense you and I, the dog and the chimney piece are necessary

necessary

cessary beings because we can none of us annihilate ourselves or cease to be: but Necessary I take it stands here in opposition to Eventual, as not depending upon the concurrence or operation of other causes, and so amounts to the same as I said before, a Being perpetually existing without a cause.

Nevertheless we have observed formerly that one may pronounce some things clearly concerning confused ideas: therefore how obscure soever the term may be we may affirm without hesitation that it cannot be local nor temporary for we cannot conceive such a difference in places or times as that a Being should be necessary in one spot or year which is not necessary elsewhere or other when. Therefore bodies are not necessarily existent because we see that any place may be without them, but if there were an absolute necessity independent on any cause that yonder rolling stone should exist where it is, it could never be removed therefrom: and the same necessity would require its existence in the next adjoining place and so in every other until the whole universe became one enormous mass of stone. For whatever has necessary existence at any time or any where must have it always and every where throughout the whole extent of time and space.

3. But

3. But though the existence of the First Cause be necessary its operations are not so, for necessity always proceeds uniformly under the same circumstances: wherefore the variations of nature may convince us that there is a choice belonging to the First Cause determining the precise number of substances, allotting them their primary properties, stations and motions, assigning their positions with respect to one another and so ascertaining the particular order of succession which constitutes the course of nature. For we cannot conceive otherwise of Non-existence than as alike indifferent to take Being or remain in non-entity or to receive any properties and modifications that shall be given it: nor of the First Cause otherwise than as proceeding by choice determining where and in what manner they shall be given. This choice we must call Intelligence for want of a properer appellation, though very different from our own understandings which how improved soever could never act as a first cause, because they do nothing without previous motives and ideas derived elsewhere: and from this Choice or Intelligence the First Cause is denominated God. For I take the point of intelligence to make the fundamental distinction between theists and atheists: all who hold the world
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and the affairs of men governed by a superiour wisdom and foresight, whether they conceive it residing in one or in many whether limited in their powers and prescribed to by the laws of nature, or even if they suppose them generated and perishable, must be allowed to believe a God. On the contrary how highly soever any may think of the eternity, self existence and efficacy of their first mover, yet while they ascribe its operations to unthinking chance or blind necessity they cannot escape the charge of atheism.

4. Besides it seems incongruous to reason to imagine that any cause should give active powers unless it has the same or greater within itself. A man indeed may beget a son that shall far outstrip him in understanding and quickness of parts, but then there are many other causes concurring to the production of a child besides the father; but that a sole cause working on no pre-existing materials should do this is inconceivable. Since then we find a degree of intelligence, prudence and forecast in ourselves, we can with no colour deny the same to the origin from whence we sprung. He that made the eye shall not he see? he that formed the ear shall not he hear? and he that gave man knowledge shall not he understand? Our own perceptions indeed come to us from
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without, but we may consider perception in the mind as a different thing from the modifications of our organs immediately exciting it: we may then conceive the like and other perceptions in God without the adventitious helps we stand in need of to strike them upon us; or if he have not perceptions of the same kind with ours, we must suppose him to have something else which answers the purposes of them more effectually.

5. Nor is it a contemptible argument for the Being of a God which is drawn from the universal consent of mankind: for our reason when proceeding most carefully being liable to error, we gain a greater confidence in it upon finding it confirmed by the opinion of others, and the more general this confirmation is the stronger assurance we shall have of our being in the right. But the force of this argument has been invalidated by alledging that far the greater part of mankind take their opinions upon trust, and that crafty persons have found an interest in leading the world into the persuasion of a superiour power they did not believe themselves. Therefore to avoid this objection let us consider the sentiments of those only who have been most carefull to judge for themselves, and we shall find them agreed in the course of their reasonings but some few led to dissent from the

rest by their misapprehension of a point of fact which I conceive may be determined by our experience and observation. The atheists I believe to a man were all corporealists holding no other substance in nature besides matter : and though they could not but acknowledge a sense and understanding in themselves which was wanting in the stones and clods of the earth and the most curious works of art, yet they supposed those to be secondary qualities resulting from an organization wherein the particles of matter were disposed. The Hylozoists indeed, by Cudworth's account of them, ascribed a little more to their atoms, imagining them endued with a quality which, though not perception, might be styled the seed or principle whereout by the junction of many of them together perception might be compleated. Thus both conceived perceptivity to arise from a certain combination or aggregation of imperceptive particles, and that there was nothing existent which was not originally and separately imperceptive, that is, corporeal.

On the other hand none who admitted perceptivity as a primary property or held immaterial substances uncompounded of matter, ever denied a God. And it may be remarked for the credit of the spiritualists that they were more unanimous upon this arti-

article than the materialists: for though the stoics according to Cudworth must be ranked among the latter, they were so far from atheism that they run into the contrary extreme and all the superstition of dreams, omens, auguries, with other methods of divination: and indeed if a composition of meer matter consisting of flesh blood and fibres may form sense and understanding in man, it will be hard to show that other compositions may not do the like, or that the order and composition of all matter which we call the Universe may not as well produce a superiour intelligence. So Bolinbroke, whom, from his deriding the doctrine of spiritual substance under the name of the pneumatic philosophy, we may pronounce a corporealist, nevertheless acknowledges a God: for catching hold of Mr. Locke's notion he would have us believe that God has annexed the faculty of thinking to that system of matter composing our human frame, so that upon the dissolution of our system we must lose our faculties, our existence and our personality. But the spiritualists, however varying in other respects, have never disputed the being of a God: some few of them, as Berkeley, have denied the existence of body, the reality of space, distance, time and all external objects, but then they attributed our perceptions to an im-

mediate act of God impressing ideas of them all upon our minds. Thus we see the matter reduced to this single question, whether perceptivity results from a combination of matter or is a primary property in the subject possessing it: for which reason I have been the more careful in the foregoing chapters to suggest what observations I could think of for showing our distinct existence, individuality and personality together with the difference of primary properties between spirit and body: for these facts once well established we shall have the unanimous consent of all serious and thinking persons to conclude from thence that there is an intelligent cause of all these things. Besides, if there were nothing but matter there could be no more activity than perception, for all exercises of activity contain something of motion, but supposing matter to have a power of moving yet being indifferent to take any direction and utterly destitute of choice it must exert that power every day alike, which consequently must destroy its own operations. A body in this case would be like an iron plate tied by many strings drawn extremely tight to all sides of the wainscot, which must hang motionless in the air although continually pulled with a mighty force, each opposite string counter-acting its antagonist, unless you suddenly cut
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the strings on one side when it would fly violently towards the other where they remained whole. But matter thus propelled to all quarters by its inherent power would want a preference to cut off its impulse on all parts except one in order to produce a motion that way. Add further that what has been offered concerning the stationing of substances, the appunctuation of time and perpetual order of succession might serve to confirm the same conclusion if it stood in need of a confirmation.

6. There are people who puzzle themselves with nice speculations concerning space, which they will needs have to be necessary because we cannot conceive it non-existent, nor any portion of it removed, nor other substances to exist without a place to contain them. But howmuchsoever we may suppose space necessary it does not affect the foregoing argument for an active intelligent cause, for space understands nothing, does nothing, and produces nothing, but is perhaps the most unmanageable idea in our imagination: the most sagacious of us know not whether it be substance or accident, whether finite or infinite, whether one continued thing or consisting of parts, nor whether those parts be determinate points or infinitely divisible; for suppose a particle in the circumference of a

large wheel to move only from one point to the next, what must the particles lying near the center do? for they all move at the same time, but they cannot move a quarter, nor a tenth, nor a hundredth of a point. The like difficulties might as well be started upon time, wherefore we cannot conceive an utter absence, nor can the future be made to precede the past, nor can any substances nor even space exist without a present moment for them to exist in. But time was never yet suspected of being a substance, and though we talk of its producing great events, this is only a figurative expression denoting that it gives scope for other agents to work in. Wherefore these speculations concerning space and time make no advancement in our knowledge but only serve to convince us of the imperfection of our faculties, which cannot fully comprehend the nature of every thing whereof they can entertain ideas: nor do those who employ them pretend to draw any certain conclusions from them, but only throw them out as a rub in the way of their adversaries. I never heard of any who were converted to atheism by contemplating the necessary existence of space, but being first prepossessed against the admission of one active intelligent and self-existent cause they endeavour to perplex the question by suggest-
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ing another Being alike self-existent and necessary: so that this is an after thought not weighing with them in their determination but used only, in the schoolmen's phrase as an argument to the man. We discern neither time nor space by our senses, they being ideas of reflection gathered from the situation of objects and the successive changes observable in them. We find the idea of both necessary to the existence of substances, and if we suppose those substances annihilated still the idea of that space and time wherein they might have existed remains: if we go to imagine those again annihilated it will amount to the supposition of a place wherein there is no place and a time wherein there is no time, which is contradictory: but this depends upon our conception which cannot penetrate so thoroughly into substances but that they may exist in a manner we cannot conceive. We have seen that time requires a cause to determine what particular point of it shall be the present: and if space be anything real or more than a mode of existence in other things, it likewise requires a cause to assign it properties distinct from those of body and spirit. Nor should I be singular if I were to suppose both time and space receiving their reality from the First Cause, but having so firm an establishment given them that we can

neither by experience discern nor in imagination conceive their non-existence.

C H A P. X.

INCOMPREHENSIBILITY.

PERHAPS there has been no transaction throughout all history more frequently quoted in theological treatises than the conversation of Simonides with king Hiero, who desiring him to explain what God was Simonides asked a day to consider of it, at the end of this day instead of giving his answer he asked for two more, and when these were expired he requested four: for, says he, the more I consider the subject I find the difficulties double upon me. This answer of his being so frequently taken notice of shows how well it tallies with the sentiments of all who have turned their thoughts upon the like contemplation. Nor is there any wonder that it should, for we knowing nothing of causes unless by their effects, seeing none of the immediate operations of the First Cause and being confined to a narrow corner of nature, cannot expect to have a full comprehension of the author of nature from whom flow many other effects besides those falling within the reach of our observation.

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We have just now seen insuperable difficulties in the contemplation of time and space, we have before met with the like in the divisibility of matter, the propagation of force from body to body, and have found mysteries in the action of our own minds which must proceed always upon motives and ideas and yet we have no idea of those fibres or other parts of our organization which are the immediate subject of our action. Since then we lie involved in obscurity with respect to our very selves and the objects most nearly surrounding us, how can we attain a perfect knowledge of that cause concerning which we know nothing more than can be gathered from those materials? The very idea of a First Cause is unsuitable to our imagination, for we see all things proceed in a chain wherein there is nothing first, each cause being likewise an effect of others preceeding. Nor can we who are confined to certain measures in our conceptions comprehend that wherein every thing is infinite as having nothing external to limit it. But since our ideas and our language are taken from objects familiar to our experience it is unavoidable that we must think and speak, very imperfectly of God: the terms we employ are for the most part figurative containing some remote similitude but not fully expressive of the thing we would signify.

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2. We hear it currently asserted that God is a spirit, nor do I find fault with the appellation as having no properer to substitute in its room : for we know of no more than two substances, Matter and Spirit, therefore since we are sure he is not matter nor contains any material mixture we can call him no otherwise than spirit. But we cannot suppose this an adequate term, for we may discover so much of him as to show that he is as different from the spirits of men as they are from matter. We know that our own spirits are moveable and passive, residing in some particular station and confined to objects touching the sphere of our presence, receiving an impulse from that matter whereto we are vitally united transferring us from place to place, necessarily affected with pleasure pain and other perceptions by the various play of our organs, extremely scanty in our knowledge, liable to error and delusion, and never exerting our activity without ideas to instigate and direct us : none of which particulars can be ascribed to God whom we must therefore acknowledge a Being of his own kind not to be ranked in the same class with any others.

3. So likewise when we declared God intelligent it was because we had no other word to express our meaning by, for if we

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had declared him non-intelligent it would have conveyed the same idea we have of senseless matter acting necessarily by transmission of impulse and therefore by no means capable of being a first cause. He that made the eye, shall not he see? and he that formed the ear, shall not he hear? but those who propounded these questions never intended to represent God as provided with optic and auditory nerves or receiving sound and vision in the manner we do. So likewise if we go on to ask, he that gave man knowledge shall not he understand? neither does it follow that understanding is the same in him as it is in us: for the thoughts of God are not as our thoughts, nor his ways like our ways. We understand by organs of sensation and reflection, by traces lying in our memory, and slow deductions of reason: nor could we understand anything unless there were something exterior to be understood; or howmuchsoever we may fancy ourselves containing our stores of knowledge within ourselves, they were first deposited there by objects striking upon us from without. Divines tell us that God is a pure act, by which I suppose they mean that his acts contain no mixture of passion nor require materials or instruments to make them take effect, as ours do; for we cannot act without organs
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of motion nor subjects to receive our action nor ideas to determine our volition: but in creation God acted upon Nothing without instruments to assist or objects to direct him in the execution. I must own this pure agency is to me an inexplicable idea, yet is this no reason for rejecting it: for we have found upon a carefull survey of nature that all substances and operations conceivable require a cause to assign their several stations properties and directions, but this cause must necessarily be inconceivable, for else there would be something conceivable that did not require a cause, which is contrary to the result of our survey taken from experience and reason the only two sources from whence we can derive any knowledge.

4. Nor was it ever controverted among theists that God is incomprehensible, being of a nature peculiar to himself and different in species from all other substances. It has been said that man was made after the likeness of God, but this likeness prevails no otherwise than our being less dissimilar than the stocks and stones we toss about; just as the top of a mole hill is nearer the sun than the bottom and therefore resembles that glorious luminary in being raised above the surface of the earth: for we cannot imagine but that the faculties and operations of man differ
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in kind as well as degree from those of his Maker. Perhaps it might be said with more strictness of truth that the idea of God is taken from the likeness of man, for our conceptions being all derived from ourselves and the objects affecting us, we can form none other than what is made up of materials furnished us by our experience and our reflection. Therefore we select whatever powers and endowments we can find among ourselves, separating from them all we deem a weakness and imperfection, and heightening them to the utmost pitch imagination can reach, the aggregate of all these makes our idea of God : whose image tis no wonder we resemble, the features of it being formed from archetypes in our own mind : nor are we without excuse in taking this method as being the only one in our power to take. But a similitude employed from meer necessity will not justify us in pursuing it too far nor drawing the conclusions we might do if we had a clear and perfect knowledge of the subject. Wherefore I can see nothing in the doctrine of likeness warranting those high flown expressions used by some, that the soul of man is a ray and emanation of the Divinity, and that God has communicated some sparks of his own perfections to us, or that the divine intelligence is no more than perfect

fect reason proceeding in the same manner with ours but having a larger field of premises to work upon.

5. From this inability to apprehend the divine Being any otherwise than by ideas taken from ourselves it follows that our conception of him must be very imperfect, and what is worse, frequently erroneous: for we are not always competent judges of what is power or weakness but often mistake the latter for the former, which induces us to ascribe our own passions, frailties and imperfections to God under the notion of excellencies. And this may plead some excuse in extenuation for the atheists, for perhaps the description which any man would give of the Supreme Being might be demonstrated in some parts of it impossible and inconsistent: besides that the ideas sometimes inculcated by designing persons for their private ends and those entertained by the vulgar are manifestly absurd. But it is no rule that a thing may not be true because some on purpose and others by mistake have blended it with a mixture of falsehood: wherefore it would become such as profess a freedom of thought and due exercise of their reason to examine whether everything suggested concerning a Deity be without foundation; for there is no reason to reject the whole of an
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opinion because the frailty of man has grafted some inconsistencies upon it.

6. For how incomprehensible soever the divine nature may be there are some propositions we may affirm with certainty concerning it: nobody can doubt that the power of God is the same in America as in Europe, the same yesterday and tomorrow as to day, that he was not born of parents, is not nourished by food, nor shall grow old and decay like ourselves; that all created substances take their stations, from whence fortune arises, by his appointment; that the order of succession, which is the course of nature, proceeds according to his direction; with many other the like assertions which need only the proposing to be assented to. Let us then endeavour to collect what we can discover clearly concerning the divine nature from such observations as we are able to make upon the things about us upon the best exercise of our reason, which though small in quantity may prove sufficient for us to draw any inferences therefrom that we may want to regulate our present conduct or ascertain our future expectations; leaving all unavailing speculations for the amusement of those who may want something better to employ their leisure.

C H A P. XI.

U N I T Y.

THERE will be little room to expatiate upon this article it being too clear to admit of a proof : for it seems a self-evident proposition that the First cause must be One, because if there were more they would want some prior cause to assign them their several stations and properties. And indeed this point with respect to the active cause has never been doubted of, unless by Zoroaster and the Magi together with their followers the Manicheans : for the heathen polytheism was no exception, their gods being no more than celestial men with a little larger powers than those upon earth but limited in their provinces, confined in their operations, and subject to the infirmities and disappointments of men. Besides this was only a popular persuasion never gaining credit among the studious.

2. We hear the Stoics speaking of the sun, the moon and the stars as so many gods, but then they did not understand the term in the same sense as we do now, for they held them to be animals having a superiour intelligence

ligence to man and moving in their courses by their own energy, but created Beings subordinate to the supreme God, the governor of all things whom they supposed to be the Universe. How they could imagine God a compound consisting of so many parts as there are substances in the world, which is making many to be one, we need not now enquire: for whatever notions they held inconsistent with unity, they did not see inconsistency, and therefore we cannot deny them orthodox upon this article.

3. Some of the ancients assigned two causes concurring to the production of all things; Thales Mind and Water, Anaximenes Mind and Fire, the Stoics God and Matter, to which they might as well have joined Space and Time if they had thought of them: but then they held their active principle to be One, and the others purely passive to take such forms as should be impressed upon them. Plato and the Pythagoricians asserted the eternity of ideas and forms, the former of which served the Deity for a plan guiding him in his works and the latter to constitute the essences of things by being applied to Substance, of which they seem to have had a more confused idea than Mr. Locke or myself, for one knows not whether they conceived it as having an existence of its own

or receiving it from time to time upon the application of form. Our modern free-thinkers talk confidently of a nature of things eternal and unalterable controuling the Deity so that he cannot do this or tother but as that shall permit him. I wish they would explain what we are to understand by this nature of things with which they seem to be so well acquainted as to tell us precisely what it will require upon every occasion: by their manner of speaking they seem to make it another cause independent on the First; or rather make the First Cause dependent upon this for the measures it shall take; for they say God would be more beneficent and mercifull than he is, delivering us from our vices with the miseries consequent upon them, but the nature of things will not let him. How they would avoid the imputation of two First Causes I know not, for they deal altogether in objections and are wisely cautious never to give us a compleat creed of their own least there should appear more holes in it than they can pick in any other. But the ancients holding the eternity of forms and ideas supposed them subsistencies inexisting within the divine Mind: what is the proper import of Inexisting or the distinction between a Subsistence and a Substance I shall not pretend to explain
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having no clear apprehension of it myself; but I think the invention of these terms show that those who employed them found it agreeable to their reason that there should be nothing external to the Supreme Being which was not produced by his own power, and consequently that the First Cause should be one sole and simple substance.

4. The difficulty of imagining good and evil to proceed from the same cause induced the Magi to suppose two principles, one to be the source of either: but then greater difficulties will arise upon such a supposition. For the primary properties of substance must be given them together with their existence, nor can we conceive such a property super-added to what it had not in its nature before: now the capacity of receiving pleasure or pain, satisfaction or uneasiness in spirits is the foundation of all the good and evil befalling them, and had they not been endued with such capacity there could have been neither, but had they been rendered capable of uneasiness only there could have been no good, or of satisfaction only there could have been no such thing as evil in the universe. But we cannot suppose two opposite principles should concur in one operation nor, could they agree so far, is it conceivable creation should be the joint work of several agents. I know that

many workmen may join in the productions of art, for these being made up of pre-existent materials and compleated by piece-meal, each may take in hand some of the several parts while others work upon the rest; but creation is a single act, instantaneous and admitting no gradations, so that were there a hundred creative powers the primary qualities of each particular substance must proceed from the same cause and be received at the same time with its existence. Nor did the Magi themselves imagine otherwise, for they attributed the creation of sentient Beings to Oromasdes, who made them capable of happiness wherein they would have continued without intermission unless Arimanius had introduced disorders and mischiefs among them. But his malicious purposes could have taken no effect upon Beings that had not likewise been capable of misery. So then the difficulty remains entire as before, because the good principle must have furnished his antagonist with fitting subjects to wreak his malice upon, and concurred in the production of evil by giving his creatures a capacity of suffering by it. I dont know whether this argument against the duality of principles has been employed before, nor was there any need of it; for the absurdity of two first causes which might require another
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prior first to determine the difference of properties and extent of powers between them was so glaring that it has quite exploded that notion off the stage: nor are there any now carrying their thoughts so high as to a first cause but what are satisfied of its individuality and unity.

5. But our knowledge of the Being and unity of God will avail us little unless we can gather something concerning what he is. Now the knowing what any substance is implies our knowing the qualities belonging thereto, its manner of existence and particularly whether it may stand so circumstanced as to affect ourselves, for else all the rest would terminate in meer speculation. But qualities and modes of existence, when applied to God, are termed attributes: these then I shall endeavour to investigate so far as I can find a solid foundation in the phenomena of nature and clearest deductions of reason. For I do not pretend to give an exact description of what is incomprehensible, nor do I design to pursue my enquiries further than my own line of conception shall reach leaving all beyond with an acknowledgement of my ignorance: neither would I proceed upon a fondness to gratify my curiosity, but with a sober and earnest desire of so much understanding

in the divine attributes as it may concern myself and my fellow creatures to attain.

C H A P. XII.

O M N I P R E S E N C E.

LITTLE need be said in support of this attribute which is inseparable from the idea of necessary existence: because as we have remarked before there can be no such difference in places as that what is necessary in one spot should not be so elsewhere. And this holds good as well with respect to a particular substance as to a species: therefore there cannot be many necessary substances though of the same species, because each being absent from the places occupied by the others, there is no other necessity for their being where they are unless what is brought upon them by a superiour cause assigning them their several stations. Therefore whatever has necessary existence anywhere must be One in number as well as in kind and exist alike everywhere throughout all the immensity

fity of space. Nor is there any variance of opinion upon this article, all who acknowledge a God, the cause and fountain of all things, believe him to be one pure, undivided, unbounded substance, pervading, containing and co-existing with all the things he has created.

2. It must be owned this is an incomprehensible idea too large for our imaginations to grasp, therefore no wonder we find difficulties in it: but these arise all from our narrowness of conception and not from any shadow of positive proof that can be produced against it. For no man ever attempted to show the limits that might circumscribe the divine essence, or point the place from whence it might be absent. But it is hard for us to reconcile omnipresence with individuality because all the substances falling under our cognizance having a locality we cannot conceive the same thing present at immeasurable distances unless successively by removing from one place to another. Large bodies we can apprehend taking up a large compass of space, but then the several parts of them occupy their several points; and body being the only object familiar to our senses we take our idea of occupancy from that. Wherefore some I have met with object, not as an argument overthrowing omnipresence but as

a difficulty wanting solution, that we seem to make God extended and consequently consisting of parts, because it is the accession of parts that extends everything we know of into magnitude. But how are they assured there can be no extension unless by means of parts? even in matter we have already found infinite divisibility so inconceivable and the difficulties on either side so much wanting a solution that the most sober and judicious persons have foreborn to decide peremptorily upon it: and in our own spirits we have found an extension of another kind, for our sense assures us of our individuality and daily experience furnishes us with reasons which to me carry the force of demonstration evincing a sphere of presence in every part whereof we are actually existent and perceptive because receiving sensations from a variety of objects at the same time: but neither can the same particle of matter conveying our sensation take various modifications at once, nor can many particles act together upon a mathematical point. And this experience of our own undivided extension may a little help our comprehension of omnipresence, for though we cannot make a new idea we may compound and enlarge those we have in store. Our own manner of existence in a sphere or portion of space sufficient to receive the action

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tion of many corporeal particles we may term a totipresence throughout the contents of that sphere we may then conceive another substance totipresent in a sphere of an inch, an ell, a rod, a mile, and so rise by degrees to the greatest extent we are able to contain in our imagination; and a totipresence throughout all immensity amounts to the same as omnipresence.

3. But we are unable with our utmost efforts to conceive an immensity of space, much less omnipresence wherein that idea is contained, nevertheless what we cannot apprehend at once or in the gross we may by piecemeal: whatever portion of space we fix our thoughts upon at any time we may conceive God to be there, and thus soar from height to height with a denial of his absence from every point in the progress of our contemplation. And this method has been recommended of old: Whither shall I go from thy spirit, or whither shall I flee from thy presence? If I go up into heaven, thou art there: if I make my bed in the grave, behold thou art there. If I take the wings of the morning and dwell in the uttermost parts of the sea; even there shall thy hand lead me and thy right hand shall hold me. To which we may add from ideas suggested by modern discoveries; If I follow the planets
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nets in their orbits, I shall find thee directing their courses: if I enter the assembly of fixed stars, there art thou holding them in their stations: if I penetrate the minute fibres of vegetables or examine the little corpuscles of air and ether, there art thou also marshalling their order and invigorating their motions. Thus though we cannot comprehend God absolutely every where, we may comprehend him wherever we can think of: this is an idea easy to our imagination, involving us in no perplexities of an extension without parts, and this we may satisfy ourselves with as being enough to answer all our usefull purposes.

C H A P. XIII.

E T E R N I T Y.

NO proof seems requisite to establish this point, it being self-evident that something must always have existed, and what can that be besides the First Cause from whom all things else received their being? Nor can we find a difference in times any more than places with respect to necessary existence, but
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what was once and anywhere necessarily existing must be so always as well as every where. And the same rule extends to the attributes as well as the existence of God : for if there were a time when he was without any of them I know not where he could have acquired them or from what sources derived them. Therefore eternity infers immutability nor was ever separated from it in the minds of men : for all who believe a God believe not only that he always was but likewise that he continues without variation or shadow of change the same yesterday to day and for ever.

2. I know not how we can conceive otherwise of eternity than as a succession of time with a negation of beginning or end. But the schoolmen are not satisfied with this idea, for they look upon succession as a continual perishing and renewing of things existing in that manner : for I am not and perceive not yesterday, the existence and perceptions I had then being lost and gone and those I have now being new ones, such as I had not then but are brought me by lapse of time, yet my yesterday's existence was the cause of my present, for if I had not been then I should not have been now : which manner of existing they think unworthy to be ascribed to God as wanting that stability and independency on
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prior time suitable to our idea of a necessary Being. Wherefore they supposed eternity a standing point with God or a perpetual Now, so that all past and future ages are as actually present before him as this instant moment is with us. And we hear divines still talking in the same strain of an eternity before all time, or when time was not, or when it shall be no more, and asserting positively that the past is not gone nor the future yet to come with respect to God. Perhaps they pronounce too confidently upon a matter whereto the human faculties cannot reach, for if we pursue our abstractions to the utmost either upon time or space I fear we shall find them both unmanageable subjects concerning which we can determine nothing with certainty. Nevertheless they would not want foundation for what they say if they would deliver themselves a little more reservedly and give it only as the more probable opinion that the efflux and succession of time is owing to the power and Will of God and therefore may take place only among his creatures.

3. We have already remarked there is no visible repugnancy against supposing the course of time might have been accelerated or retarded : I do not mean that twenty years might have passed in ten or taken up forty to run them out, for this were a contradiction, but

but that the whole order of them might have been removed higher or lower, so that the Augustan age or that of our remote descendants might have been the present. In which case the efflux of time would require some cause to fix it where it is: and therefore must depend upon the Will of God to determine that no more or no less of it should be expired. Nor are there no grounds to suspect that even with ourselves the present moment may contain an interval of time though extremely short, for else how should we get the idea of time at all? Mr. Locke says we get it by observing a succession of ideas, and this way I can readily allow that we come by the measures of minutes, hours, days and years which we use in computation: but succession implies a previous idea of first and last before it can be attained, for a variety of ideas afford us no notion of succession unless we perceive one come before the other; nor can it be imagined that their degrees of vividness or faintness will do the job, for let a man stand with a candle in his hand between two looking glasses he will see a number of flames in the glass before him each fainter than the others, yet the whole scene will appear quiescent nor exhibit any idea of succession. And the ideas of things in our remembrance, though fainter as more
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remote would do the like unless we had another idea of prececedence annexed to them. So then our idea of prececedence seems to be an original, not derived from any other but gotten by our manner of existence extending to a length of time wherein there is a first and a last.

4. And I may offer to the consideration of the curious whether this does not stand confirmed by the evidence of our senses in their discernment of motion, of which they have an immediate sensation in some velocities but not in others. For you may see the motion of a stone thrown across you very plainly but you cannot see that in the short hand of your watch. If indeed you look at it again an hour after you will see that it has moved because finding it in a different place from where it was before: but this is a logical inference gathered from the joint testimony of your present sense and your memory of the figure to which it pointed the first time: whereas your knowledge of the stone moving came by direct sensation without aid of the memory or reflexive faculty. Now to see a body move I apprehend we must have an actual perception of it at once in two distinguishable places though it cannot actually be in those two places at once, from whence it seems to follow that our acts of immediate per-

perception have a certain duration containing a beginning and end both present to us together, and whatever moves so slow as that the spaces it passes over within that duration are not distinguishable by our senses appears to us quiescent. If any one shall think the discernment of motion effected by that continuance of play in our sensitive organs after the impulse of objects ceasing mentioned in the chapter on Reflection he will not find it warranted by experience: for a stone may be thrown very swiftly yet without drawing any trail behind though you observe it ever so carefully, and a live coal whirled very smoothly round upon a wheel will present no idea of movement at all but appear a quiescent fiery ring. The distinction of places to our sense depends, not upon the real distance between them, but upon their apparently subtending an angle at our eye, which the same extent of latitude may do when near us that cannot do it when removed farther off. Therefore the moon seems to stand still when we look upon her, because the change of place she makes during a single perception does not suffice to subtend an angle: whereas did she hang so low as almost to touch our atmosphere we should see her whisk over us with an amazing rapidity. Hence if any curious person can ascertain precisely
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what is the least discernible angle and slowest visible motion he may compute how many of our moments or present times there are in a minute: for by contriving to make a body move equally with that slowest pace in a circle whose center lies at the eye and casting up how many of those least discernible angles compose an entire circle, he may reckon just so many moments in the time of one circumlocution made by the body. But if we have a measurable Now of our own, the whole of which is present to us together, we may augment it in the same manner we did the sphere of our presence until it stretch to the utmost length we can contain in our imagination, and that will make the fullest idea we can form of eternity.

5. Many persons perhaps will not readily enter into what has been here said concerning the standing point or perpetual Now, and truly if they do not find it occur easily to their comprehension they may e'en pass it over as being scarce worth the while to take much trouble in studying it. For we do not find the conception of a continual perishing and removal of time by an uninterrupted succession of moments debases our idea of God; and it would be difficult to make a common man feel the force of the schoolmen's objection or see any hurt in
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supposing him to exist in that manner, so as we apprehend the succession to have had no beginning and to meet with no stop. We have indeed a certain period set to our lives and therefore the lapse of every moment takes away something from the stock of futurity we had in store: but eternity is an inexhaustible fund, therefore time may go on continually perishing without being ever totally destroyed, so that though we should imagine God existing by moments he will never want moments to exist in. And as he has been pleased to give our spirits an individuality which all the powers of nature cannot dissolve, the efflux of time is no loss to them who have the same inexhaustible fund for a perpetual supply. Wherefore there is no occasion to alter the common conceptions of mankind upon this matter or perplex them with objections requiring an answer that few can understand.

C H A P. XIV.

O M N I P O T E N C E.

THE very train of reasoning leading us to acknowledge a God evinces his omnipotence, or rather, if I may so speak, finds omnipotence in the way towards his existence: for we infer a God because we want a cause from whence all the effects and powers we have any knowledge of must originally proceed. Whatever is done or possible to be done must be done by some agent, and the aggregate of all powers and possibilities make up omnipotence, which we can place in no other subject than God, whom therefore we justly stile Almighty. 'Tis true we find power divided among the substances falling under our notice, one wanting what another has: but then the powers of all must derive from some one cause, whom we cannot suppose to want the powers he has given to other things, besides another power not found in any of them, that of creating and allotting primary properties and original stations. Mr. Locke tells us that active powers alone properly deserve the name, and I think we need make no difficulty of ascribing

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ing all those we find in substances to God : for we cannot well doubt that he might if he pleased resist and impell, that is, stop or confer motion like body, or excite perceptions and judgements like our organs ; and that he does admit like space appears manifest from the substances we see, each whereof must co-exist in the same place with that which is omnipresent throughout all immensity : nor can we any more doubt of his possessing in an eminent degree all the active powers discoverable in spirits. And for passive powers, such as mobility, inertness and perceptivity, particularly that of pain or uneasiness, though we must not attribute them to him, yet are they all effects of an active power exerted at their creation. We see the course of nature proceed by second causes having their several portions of power allotted in small parcels among them, and these allotments requiring so many operations of active power in conferring them bespeak an omnipotence in the First Cause.

2. Thus the contemplation of the works of nature and all the powers we can discover operating therein gives us our first notion of omnipotence : but the mind of man does not rest here, for there requires something further than actual operation to compleat the idea of power. We find many instances in

ourselves wherein we might have acted otherwise than we have done and conceive ourselves able to take another course in our future measures than that we shall pursue: nor can we avoid thinking the same of God, for if we were to confine his power to the works he has actually performed we should destroy that choice which distinguishes him from blind necessity, unthinking chance, or whatever else has been assigned for a first cause: neither can a power pinned down to one particular way of acting be properly called a power. This extends our idea of power to possibilities as well as real events, and what has never happened nor will ever happen is esteemed its object equally with what has already or will hereafter come to pass. And now we conceive omnipotence a power to do anything without those impediments and restrictions which obstruct us and all created substances in our operations.

3. Yet still there arises another idea perplexing our imagination with the suggestion of absolute impossibilities, which appear such even to omnipotence itself and therefore seem to restrain and limit it within a certain compass: such as making a body exist in several places, causing two and two to make five, annihilating time and space, undoing past events or producing contrary ones. But all these things

things imply contradictions and contradictions are generally held to be no objects of power as their possibility would infer a defect rather than an enlargement of power : for if upon a power being exerted to produce a particular event another might likewise ensue it would show a deficiency in the agent as being unable to prevent another issue from taking effect besides that he intended. But after all I don't know why we should pronounce anything absolutely impossible, but rather conclude that what appears so has been rendered impossible by those laws which God has established immutably : and to suppose him acting contrary to them is supposing him to do otherwise than he has determined to do, which I am sure is no instance of power. He has made body local, and to exist in several places it must be a different thing from what he intended it : he has fixed certain relations between numbers, and to alter those relations would be introducing a confusion he has not thought proper to throw upon us : he has annexed the ideas of time and place to all our ideas of substances, and to separate them would be giving rise to other conceptions than he has thought fitting for us : he has made the past unalterable and determined that no operation shall have any more than one issue, and to suppose otherwise would be supposing him to have done what

he has not done. Therefore wherever there appears a palpable impossibility we may depend upon the thing never happening, without ascribing the impossibility to any other than the appointment of God who has established the properties of substances and issues of events so firmly that we cannot conceive them altered.

4. But there is another limitation of omnipotence invented by our moderns in what they call the nature of things: for they say God could not make man impeccant, could not prevent moral and physical evil the latter being a necessary consequence of the former, and that he must have a gradation of Beings in all stages from Nothing up to his own perfections. For my part I can understand nothing else by the nature of things beside the properties of substances, the situations given them and motions impressed upon them, together with the mutual operations resulting therefrom: and these being given to the substances at or after their existence could not controul the acts of the Almighty whereto they were posteriour. It is the nature of plants to vegetate, therefore before there were any plants or growing bodies there could be no such thing as vegetation: it is the nature of fire to burn, but before there was any fire there could be no such thing as burning. In
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like manner physical evil began with the capacity of sentient Beings to suffer by it, and moral evil depends upon this together with the constitution of man occasioning perpetual struggles between reason and appetite: for if he were not liable to suffering he could not take his measures amiss, and if he were void of reason he would not do wrong in following appetite having nothing else to follow. That there is a scale of Beings I know, but that it reaches within one step of Divinity I neither know nor believe: nor if it did could I ascribe it to anything prior to the good pleasure of their Creator, for I can see no necessity hindring that all Beings might have been made of the same species. Therefore the capacity of man, his sensitive-rational constitution, the various orders of Beings, the properties, stations and motions of substances, could not prescribe rules to the Almighty from whose power and appointment they proceeded.

5. If it be alledged that we may conceive a nature of things abstracted from the things themselves, let us remember that our abstractions are all taken from our observation of substances and their mutually affecting one another, and that the abstract is made by an arbitrary separation in our thoughts of what nature has exhibited in the concrete. It is said the rules of natural justice are unaltera-

ble, and so they may because resulting from the nature of man which does not change with time and place: for he is made a sociable creature, capable of assisting or hurting his fellows, invested with reason and appetite. The brutes wanting reason have no justice belonging to them: nor would there be any rule of it in man had he no temptation to do wrong; or were he shut up alone like a maggot in a nutshell there would be no place for justice. I see no contradiction in imagining that God might have placed all his sentient creatures apart by themselves without any knowledge or perception of one another, in which case there would have been no such thing as justice in nature: therefore when he gave man his faculties and placed him in a situation to have intercourse with his fellow creatures, then he made justice and then the nature of it began.

7. It is said that God cannot act arbitrarily and therefore must have some rule or nature of things to guide him. If by Cannot you mean that he never does, I have no objection: but let us consider what we understand by arbitrary action in men, which is when they act upon whim or humour or passion, all which must certainly be denied of him. But why must an action be arbitrary unless confined by some restriction from
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taking another turn ? we find many instances of the contrary in ourselves. Tis true if I promise to meet a company upon any occasion whether of business or pleasure, though the appointment was voluntary at first, I am now under an obligation to keep it, so my liberty to do otherwise is gone : but this is not always my case, I sometimes lay out a plan of several places I will go to or several things I will do wherein no other mortal has any concern, and having a little steadiness in my temper I pursue it accordingly, without any restriction upon my liberty to depart from it at any time : and since I look upon this steadiness rather as an advantage to my character than otherwise, I am willing to ascribe it in the highest degree to the Almighty, the tenour of whose conduct I conceived fixed, not by law or rule but by voluntary determination. Wherefore there is no occasion for attributing what we find unalterable to an antecedent nature of things limiting and prescribing laws to God, because we may ground it as well upon his immutability. This seems an idea more worthy of him and more consistent with our notion of omnipotence ; and we may draw as many good uses from the opinion that he will not as that he cannot order the course of nature otherwise than he has done. Provided we take along with us
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this caution to be very careful in our judgement of what things are unalterable : a point wherein those who talk most loudly of a nature of things have been sometimes grossly mistaken.

7. Many divines, particularly Bishop Beveridge and Dean Sherlock, endeavour to heighten our idea of omnipotence by asserting that God is not only the Creator but likewise the continual support of all substances, who would lose their Being the moment he should withdraw his operation upon them. The Bishop after his usual manner speaks positively as if he knew the thing by ocular demonstration, and uses the comparison of a book holden in one's hands to explain his meaning. For, says he, if I take away my hands the book will fall to the ground without any act of mine to throw it down : so I myself should instantly drop into nothing were God to withdraw his sustaining power from under me, without his needing to do anything for thrusting me out of Being. Whether the case be so with us I shall not pretend to determine so positively as his Lordship, it being a matter beyond the reach of my understanding to penetrate : but I may say we have no direct evidence of the affirmative, there being rather an appearance of the contrary in the abiding quality of bodies which after all
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the divisions and separations that can be made by fermentation, putrefaction, dissolution and burning we still know are not lost out of nature. Nor does it much heighten our idea of omnipotence to imagine powers not derived therefrom, for substances it seems have an inherent power of annihilating themselves if omnipotence were not constantly at work to counteract them. There are inconveniences attending this hypothesis which the dean labours for many pages to remove : and though it may help to give us a full persuasion of our intimate dependence upon the Deity the same might as well be attained by contemplation of his omnipresence. Nor would it a little weaken our assurance of our own immortality built upon the individuality of spirit to suppose individuals too perishable unless sustained by the immediate hand of God ; for though he may still continue to support us we can never be so sure of his future acts as of those he has already done, for the latter are our proofs of the former : therefore his having given us a durable nature is the strongest evidence we can have from the light of reason that it is his Will we should continue for ever. And it is most agreeable to our ideas to conceive a permanency of existence in substances which nothing less than omnipotence can destroy : the powers of nature
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may form compounds, throw them into different combinations, encrease, diminish, alter or entirely dissipate them again, but cannot take existence from any single particle either of material or spiritual substance: this has been always esteemed a privilege reserved to omnipotence alone, and that it requires an exertion of the same power to annihilate as to create. Nor will our thinking in this manner lessen our apprehension of the divine sovereignty, for nobody doubts that he who made us may destroy us again with a word, nor that we receive the materials for our well being, without which Being were nothing worth, by his appointment, and in this sense he may truly be called our continual support.

8. God is incomprehensible in all his attributes, and if we go to fathom the depths of omnipotence we shall lose ourselves in darkness and perplexities: therefore letting alone all the subtilities of absolute impossibilities, of an independent nature of things, and of the sustentation of existence in substances, let us fix our view upon a prospect we can clearly discern. Let us conceive of God as performing by second causes all the mighty works we see performed, and able to do whatever we can comprehend possible to be done. Let us consider him giving existence

ence to substances, solidity to matter, perceptivity to spirit and understanding to man: limiting the ocean, spreading out the earth as a garment, and stretching forth the vast expanse of heaven: rolling the planets in their orbits, fixing the golden sun, and appointing the stars their stations: causing gravitation between large bodies, cohesion between small, elasticity in air and ether: giving motion to the wheels of fortune, stability to the laws of nature, and directing both their certain courses: forming the fibres of plants to fit them for vegetation, the vessels of animals to carry on circulation, and the mental organs to serve as instruments for the understanding: making the earth yield her encrease for our sustenance, feeding the cattle upon a thousand hills for our uses, supplying us with air to breathe, water to drink, cloaths to put on, and innumerable objects all around to employ and entertain us: commanding the issues of life and death, and having the future condition of spirits at his disposal. The contemplation of these and a multitude of other things that a little thought must easily suggest will I apprehend give us the fullest idea of omnipotence that we are capable of and make us sensible the Lord is our continual support and that in him we live and move and have our Being.

C H A P. XV.

O M N I S C I E N C E.

WE have remarked before that intelligence is not the same thing in God as in ourselves, for our intelligence would not suit a First Cause: we cannot work without motives and ideas suggested by objects previously affecting us, so that there must be something already existing from whence we may receive the information necessary to conduct us in our proceedings. Besides, intelligence is a particular mode of perception wherein the mind is always passive, taking such judgements as are impressed upon it: for judgement properly is the act of the objects under contemplation and not of the perceiver, otherwise than by his bringing such of them into his thoughts from whence some judgement may result. We may fancy but not understand peaches growing upon an oak, rivers running upwards: nor in general can we understand anything different from what it appears after the most thorough examination. Therefore how imperfect notion soever we have of pure agency such as is generally ascribed to God, we may see clearly that

that perception as in us being passive is incompatible with it : for we cannot imagine him passive to receive impressions from the impulse of objects, nor yet can we deny him understanding before there was anything external to be understood, much less refuse him knowledge of the things he has created.

2. The vulgar have an advantage over the studious in some respects for they discern not the difficulties which perplex the others : they make no boggle of creation believing they see instances of it in striking fire, which they take to be something new not existing before but produced by the collision of flint and steel, for they think nothing of particles detached from the colliding bodies, nor of a subtile matter emitted from within their pores, nor of a circumambient ether agitated by their vibrations, which being put into a certain violent motion appear in the form of fire. So likewise they seem to have experience of pure agency in their own meditations and voluntary reflections wherein they imagine themselves acting within themselves without instrument or material, without other object than their own acts. But our experience that when our organs are indisposed we cannot think at all may convince us that we have instruments to employ and materials to work upon in our mental operations : and
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upon a closer attention we shall find that even in the most abstracted thought there must be something to be perceived numerically distinct from that which perceives. And in general the further we pry into the secrets of nature we shall find her abounding in mysteries that do not occur to common apprehension. Since then tis the view of nature that must give us any conception of the author of nature, the more difficulties arise in the phenomena the less able shall we be to comprehend those attributes by which they are to be accounted for: so that tis no wonder Simonides asked still longer time the further he pushed his enquiries upon this subject.

3. Our inability to conceive knowledge without prior means of information together with the absurdity of refusing God that knowledge he has given to ourselves obliges us to ascribe him intelligence and at the same time to acknowledge this attribute ineffable, being something of a higher nature but comprehending under it all that belongs to understanding as in the mind abstracted from the idea of any conveyance bringing it thither. Since then it would be in vain to go about to describe the manner of his knowing which in the nature of it must be different from ours and yet we can form no idea of any other

other knowing than that we experience ourſelves, we are excuſable becauſe neceſſitated to think and ſpeak of him in a language ſuitable to what we have experience of. Thus we ſay he ſees all things, looks backward upon the paſt and forward into the future, diſcerns all poſſibilities together with the conſequences of his own immediate acts or thoſe of ſecond cauſes to the remotest chain of events, and knows whatever is the object of knowledge. The higheſt term we have to employ is Intuition, the ſame as Beholding, a term taken from our ſenſe of viſion and ſerving only to exclude the ſlow proceſs of reaſon whereby we advance gradually to the knowledge of what we cannot diſcern directly by our ſenſes or our judgment.

4. The difficulty of apprehending any voluntary act, even that of creation, to proceed without a prior intelligence, or of intelligence ſubſiſting without objects to be underſtood, has ſet men upon contriving objects for the divine intelligence co-eval with itſelf: for the ancients held forms, ideas and truths to be eternal, obtaining a place from everlaſting in the divine mind, and I ſuppoſe theſe are what our moderns would underſtand by their unalterable nature of things. If you examine what thoſe forms and ideas were you will find

they were not God, nor attributes, nor yet distinct substances, but inexistencies in him: which Inexistency was a very convenient term, implying something that was both a substance and not a substance, and so carrying the advantages of either: as a substance it was capable of eternal duration and of furnishing objects for understanding to perceive, as not a substance it avoided the plurality of necessary Beings, of dividing God into parts and of making substances uncreated. Nevertheless admitting the reality of inexistencies it will be hard to comprehend inherent eternity belonging to them, for truths are prepositions concerning substances or something relative thereto, therefore cannot be older than the subjects whereof they are predicated: that justice is better than iniquity springs from the powers of men to benefit or endamage one another and the consequences resulting to them therefrom which renders actions of one sort better than those of the other. We have seen that if there were no creatures capable of doing good or hurt there would be no such thing as justice in nature, and if there were no such thing there could be nothing affirmed or denied concerning it. The epithet Eternal given to some truths implies there are others not so, and the very distinction made between eternal and temporary truths shows their

their duration to depend upon that of the subjects whereto they are applied. The same may be said of forms which are only modifications of substances: form as denoting figure could have no place before the existence of matter nor perhaps before the combination of it, for we know not whether the atoms have any figure or no: and extended to a larger sense including the form of Being in other substances, it depends upon their primary properties, situations and connections which cannot be older than themselves. But it may be urged that although all external objects were annihilated yet we might retain an idea of the forms they had exhibited, therefore there is no inconsistency in supposing the like idea to subsist in some mind before they were existent. But let us consider that the ideas we discern are modifications of our organs which are exterior to the mind that discerns them: and if we distinguish the perception from the idea and suppose the former in some mind without the latter it must be a pure act and of course posterior in order if not in time to the exertion of some power by the agent: so that perception must be the act and produce of the divine intelligence instead of the object or fund in store giving scope to it.

5. It is remarkable that those who will not let God understand or do anything without ideas are the very persons who stickle most strenuously for a liberty of indifferency in man: so that they will not allow the supreme Being to enjoy a privilege they assume to themselves. Which by the way shows the inconsistency of this supposed privilege with our notions of freedom since we cannot conceive the most powerfull and uncontroulable of all agents to act indifferently without making him liable to humour and arbitrary proceeding: from whence we may justly infer that what they take for proofs of indifferency are rather instances of weakness and imperfection in man. Perhaps I shall be asked whether I can conceive God to act in creating without a view to some purpose or without a plan containing that order of succession he was about to establish; and I shall readily acknowledge that I cannot. But when I consider why I cannot, namely, because of the narrowness of my conception which is confined within the compass of my experience, and because I can comprehend no other manner of knowing than that I have experienced myself, my not conceiving amounts to no more than a negative proof, which in a matter of this nature is no proof at all. For though want of conception be a proper evidence

dence in things familiar to our observation whose properties and operations we are well acquainted with, as that a stone cannot mount upwards without an external impulse, that water alone cannot compose a vegetable, that solid bodies cannot penetrate one another, and the like ; yet in subjects whereof we have no direct experience but only such partial knowledge as may be gathered from their effects we can expect to comprehend nothing further of them than their ability to produce those effects : whence arises the distinction between things above reason and things contrary to reason. Since then we find an understanding such as ours in kind, though extended to the highest degree, incapable of assigning properties, allotting stations and directing other circumstances attending creation, but are satisfied nevertheless that all these things require an understanding, let us conclude the divine intelligence a subject above our reason, and forbear to pronounce anything more concerning it than that it is sufficient to work all that admirable contrivance which we discern in the works of nature. Or if we still think pre-existent ideas necessary, let us ascribe their origin to some attribute yet unknown and unthought of : for we must not imagine that what little we know of God comprizes

the whole of his essence, but there are not improbably other attributes of which the mind of man has not so much as entertained a suspicion.

6. The like difficulties with that concerning prior information being necessary to complete understanding may be started concerning remembrance and foresight, the former being in ourselves an inspection of traces in our memory and the latter an inference from our observation of past events. If the schoolmen's standing point could be made clear to our apprehension we need ascribe neither remembrance nor foresight to God, as things superfluous; for the past and future being alike present before him might be discerned by intuition as well as events now actually occurring. But since it is not easy for us to separate time from succession and since to common apprehension it does not derogate from our idea of God to suppose him existing by perpetual duration, we may without hurt imagine him to remember as we remember and to foresee as we foresee events within our own power by knowing our own intention, where we know perfectly what may be done with the instruments and materials we have to employ: taking this conception as the best we can form and not absolutely pronouncing it adequate to the subject.

7. And

7. And indeed the fullest conception we can obtain of the attributes arises from contemplation of their effects, for if we go to penetrate into nice abstractions we shall find them oftener obscuring than enlightening the mind, oftener contracting than enlarging the prospect. Therefore as we did before upon the article of omnipotence let us now take a short survey of nature to find the clearest footsteps of omniscience. Let us consider the Creator determining the precise number of substances, allotting them their properties and capacities necessary to compleat the grand design he had in view: forming a plan to make a world which was to last for ages with infinite varieties and successive changes out of homogeneous matter, where every particle must have its appointed station, every motion its determinate velocity and direction: calculating exactly at one glance all the combinations they will run into, the species of compounds they will produce, together with the secondary qualities, operations and mutual affections resulting therefrom. How stupendous must be that wisdom which directed infinite power, and by which every thing was established in number, weight and measure! He knew the exact quantity requisite of that invisible force whereon fermentation, heat, explosion, repulsion and the four

attractions depend which had it been greater or less might have produced nothing but disorder in nature. He proportioned the elements that none of them might predominate or fall deficient, and contrived springs for mingling them together that they might concur in forming the productions he designed. He appointed the degree of influence in the sun and moon, the inequalities of the earth, the rise of exhalations, the variety of soils and other causes which bring on the change of seasons, vicissitudes of weather and various dispositions of the air, causing the earth to yield her increase in proper measure neither redundant nor wanting. He contrived the curious structure of vegetables, the more admirable organization of animals, where every vessel, gland and fibre, every part performs its several office for the growth and preservation of the whole. He adapted the texture of his plants to the wants of his living creatures so that each species has its proper food, its nests and places of harbour, and finds uses in that which is unserviceable to others. He ranged his elements in such order as to carry on the course of nature without perpetually needing his own interposition: so that they produce minerals and fossils below, vapours, clouds, dews and rain above, insinuate themselves into the seed to make
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make it germinate and into the plant to make it bear fruits and seeds again, into the fœtus to bring it to maturity and into the perfect animal causing it to fructify and renew the species. He gave various instincts to brutes and appetites to man urging both to effect purposes they do not think of themselves. He allotted their several provinces to the causes of destruction as well as those of formation and preservation : he maketh the storms his ministers directing them what to overthrow and what to spare : he commandeth the earthquakes how far to lay waste and where to stop ; the lightning whom to strike and whom to pass over. Blight, famine and pestilence have their limits in what quarters and what extent to spread their havock, chance and casualty their directions when and where to fall : and all this by the intervention of second causes which are so wonderfully contrived and exactly adjusted as never to disturb that order of succession he has established.

8. Nor is his wisdom less conspicuous in the moral than the natural world : he has put much into the power of free agents and left many things to their choice and management, yet he directs their choice by such unseen springs as lead them to execute his purposes when they least intended it. He
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has distributed various constitutions, talents, endowments, passions and desires among men, so that some are fitted as well in ability as inclination for every office wanted in society, and all the conveniencies of life depending on human industry supplied. Commerce, agriculture and the mechanic arts want not hands to carry them on, nor policy, learning and science able heads to improve them: the jarring interests and opposite views of private persons serve to ballance one another and are made to produce order by their proper commixture out of that which separately would tend to confusion. He knows how and when to raise up peculiar characters that may found empires and overthrow them, to erect new kingdoms upon the ruins of old ones. Nor does he only provide for the establishment, the security and general welfare of nations but so directs the behaviour of men to one another and the dispensations of fortune that each individual shall receive the precise portion of good and evil intended him. Nor are his cares confined to this sublunary stage, for we have seen that the spirits of men are of a nature to endure after their dissolution from the body and we cannot suppose the primary properties given them for nothing but that they shall receive perceptions by other channels than those which convey

vey them now : so that there must be a different set of laws for the several forms of Being we are to undergo and, as we may reasonably presume, a connection of interests between the visible world and the invisible : to adjust which requires a more stupendous wisdom than anything falling under our notice can exhibit, though that is enough to excite our wonder and exceed our comprehension.

9. And this consideration may help to remove some objections that have been raised upon the seeming errors of nature, as that she wastes her strength in unprofitable efforts and sometimes thwarts the purposes we suppose her to have intended. Lucretius urges that the world could not have been made in wisdom being so full of defects : ravenous beasts, poisonous herbs and pestilential vapours abound, the rain falls upon the sea where it can do no good, the sun shines upon barren rocks where it can produce nothing and man is liable to continual disappointments and disasters. But nature is not thought to work in vain when she contrives a curious structure in the grains of corn fitting them for vegetation, although that purpose be defeated by the corn being made into bread for the nourishment of man : but rain falling into the sea where man receives
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no benefit by it is exclaimed against as a want of contrivance, because we judge of prudent and vain solely by what relates to ourselves; as if nature had nothing else to do besides tending our services, and whatever was of no use to us were absolutely useless. Besides that we may be mistaken in our premisses, for what is not of immediate use may be remotely so; perhaps the fresh water mingled with the sea may prevent its sending up exhalations that might be hurtful to us, and the sun darting heat upon rocks communicate a warmth to the ground below or air above which does a good we know not of, or at least we may allow it to influence the weather and thereby affect the growth of fruits and corn. But supposing these things were of no service to us they may do service to the fish, the insects or other creatures who deserve some share in the cares of nature together with ourselves. As to the disasters and disappointments befalling mankind, we many times find reason afterwards to rejoice at their having happened and many more times there may be reason though we do not discern it: but if there be any from which we receive no real benefit and that the condition of life were better upon the whole without them, yet they may be some way serviceable to other Beings or to ourselves in another

another state of being. Nor is it an exception against our argument that we proceed upon what may be without showing what is the case, for the burthen of producing evidence lies upon the objector: there are innumerable marks of wisdom in many works of nature, therefore a possibility of there being the like in those where we cannot trace it is a sufficient defence, and whoever would arraign this wisdom ought to show that the latter cannot terminate in any good effect. For our not discerning the expedience in some performances of an agent does not overthrow the opinion we had entertained of him from others, nor has it that effect upon us in the common occurrences of life: if a man of whose skill in language and knowledge we had experience were to deliver himself darkly and mysteriously upon some occasions, we should not presently conclude he had no meaning in what he said. If we went into the workshop of an artificer where we found many things admirably contrived and put together besides others whereof we could not possibly guess the uses, we should not infer from the latter that he proceeded foolishly and unthinkingly in all we saw before us. In both cases we should attribute the seeming uselessness of anything we saw or heard to our own want of discernment; and much more
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ought we to do so with respect to the operations of nature whose tendencies and mutual dependence we have so insufficient faculties and so little opportunities to investigate.

10. When we reflect what a wilderness of thought must be requisite to govern innumerable worlds and order all the particulars belonging to them, we shall find it inconceivable that so much can be contained together in one understanding: therefore some have made it an objection that such a boundless variety must perplex and burthen even the divine intelligence. But let us consider why a multitude of thoughts are perplexing and burthen some to ourselves: we perceive by organs and can have no more perceptions than they from time to time excite in us, but the sphere of our presence being too narrow to admit many of them to work upon us together we are forced to labour and toil in bringing such of them into play as we want, and generally others intrude with them which disturb their operation and perplex our ideas. But how much difficulty soever we may have found in connecting a chain of reasoning or forming a train of thinking, when once become familiar to us by frequent contemplation, we find no difficulty in running it over afterwards and comprehending so much of it as we can contain in one view: for
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whatever occurs readily to our thought we discern easily and distinctly, nor find any trouble or perplexity in perceiving where the prospect lies full and clear before us. If then we will needs imagine God to understand as we understand by the perception of objects, let us remember that the sphere of his presence extends throughout all immensity, that he wants not the ministry of organs to bring objects before him, none being ever absent from him or removed out of his reach. And perceptions take up no room in the thought nor interfere with one another, but tis the want of them that causes perplexity.

11. There are some truths, as was remarked at the end of our chapter on Judgement, reputed self-evident because they strike the mind irresistibly, yet we cannot trace their origin nor deduce the train of reasoning whereby we arrived at them: among this class may be reckoned the Divine Happiness, which we do not discover from the works of nature as we do the other attributes. The mighty fabric of the world manifests an omnipotence, and the apt concurrence of causes to answer their several uses and purposes declares an omniscience: but we cannot infer the happiness of the Supreme Being from that of his creatures any more than we can the contrary from their miseries. For satisfac-

tisfaction in ourselves is a perception, it is a state the mind is thrown into by the act of objects striking upon our senses or reflection, wherein we are entirely passive nor can help receiving either pleasure or pain while the proper causes are operating: but we cannot ascribe passivity to God nor imagine his condition to depend from time to time upon the agency of anything external. Nevertheless the very sound of a miserable or an insensible Deity is shocking to the ear and repugnant to all our notions, nor was there ever any one who admitted the Being of a God that did not conceive him unspeakably happy. We find happiness the only thing desirable, or that which renders all other things desirable, and constantly employ our efforts to procure it: therefore we might suppose that where there is almighty power and infinite wisdom all means of happiness would be put in practice: but God uses no means to obtain it, evil cannot approach him nor does he want objects or channels to convey him happiness. He made not space for his own reception, matter for his own uses, nor sentient Beings for his own solace and society, but possessed infinite happiness in himself from everlasting without encrease therein by the works of creation. This is what every man's judgment will agree to, and we find no suspicion
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arise of the contrary: therefore we may pronounce God ineffably happy, but that happiness in him is not just the same as we feel it in ourselves.

C H A P. XVI.

G O O D N E S S.

OF all the divine attributes there is none concerns us more nearly or the just notion whereof is more desirable than this of Goodness; and yet none perhaps wherein we find more difficulty to form a satisfactory idea not liable to objections and inconsistencies. Infinite power and wisdom avail us nothing of themselves, but are rather objects of amazement and terror than of comfort and confidence: and it were better for us to live under a kind beneficent governour though a little defective in knowledge and ability than one unlimited in either but regardless of our weal or woe: for the former would procure us more good than harm but what befell us from the latter would be meer chance and accident. The contemplation of omnipotence, omnipresence and omniscience without goodness

has most of anything driven men into atheism : for they looked upon such a Being as a universal spectre hovering continually over them, prying into all their affairs, able and skilfull to affect them in what manner he pleased ; and as we are apt to expect the worst from uncouth appearances they chose rather to put themselves under the guidance of chance or necessity, therefore used all their wits to persuade mankind that the notion of a God was only a phantom raised in their imagination by crafty persons who found an interest in affrighting them. Thus we find the idea of goodness inseparable from that of God in the minds of all men, for those who could discern no marks of it in the works of nature concluded from thence that there was no God, admitting that if there were he must be good : and all who have acknowledged a God have ascribed goodness to him as an essential attribute. Even the Magi when they asserted another co-eternal principle they did it to assign a cause for some things they thought could not proceed from that unlimited bounty and goodness which they believed residing in God.

2. But the attributes of God must all be infinite, for there is nothing external, nothing prior to limit him in his powers or his operations : here then arises the difficulty, for if
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the goodness of God be infinite whence comes there any evil in the world? Yet that there are innumerable evils the phenomena of nature sufficiently assure us: storms and tempests, earthquakes and inundations lay fields and cities desolate with all their produce and inhabitants, blighting winds and pestilential vapours wither up and destroy, ravenous beasts devour, villains assassinate, thieves break through and steal, tyrants oppress, diseases torment, cross accidents vex, old age debilitates, our necessary employments fatigue, our wants interfere, our very pleasures cloy, and man is born to sorrow as the sparks fly upwards. We are necessitated to destroy vermin that would overrun us, to slay our fellow creatures for our sustenance, to weary them out with toil and labour for our uses, to press one another into wars and sea services for our preservation. Nay evil is so interwoven into our nature that the business of mankind would stagnate without it, most of our cares being employed in delivering ourselves from troubles we lie under or warding off those that threaten. If a man were placed in such a situation as that no pain or mischief, no satiety or uneasiness, no loss or diminution of enjoyment could befall him, he would have no inducement ever to stir a finger: but tis the perishable nature of our satisfactions

that urges us to a continual exertion of our activity to renew them. Now it has been asked that if these unfavourable circumstances attending human nature could not be prevented where was the almighty power of God? if he knew not how to prevent them where was his wisdom? if he could and might have prevented them but would not where was his goodness? Nor will it suffice to answer that many of the evils before mentioned tend to produce greater good and tis probable the rest of them do the like: I am so far from denying this probability that I may offer some reasons by and by for confirming it, but admitting that good springs out of every evil, this must be owing to the necessary connection between both in the present constitution of nature, but when we consider that nature is not only directed and governed but was originally constituted by the hand of God the difficulty still recurs. For if he wished to have given his creatures unmingled good but saw no other constitution of nature possible besides that he has established, this seems to limit his power and we are at a loss to account for such limitation: if there were other constitutions possible containing no mixture of evil, this perplexes us with respect to his goodness which we cannot

not conceive to choose a frame of nature disagreeable to itself.

3. Several solutions have been attempted for this difficulty none of which reach to the bottom, for they stop all at second causes without reflecting that the properties and powers of second causes depend upon the First: therefore as often happens in trying to unravel an entangled thread, while they loosen the knot in one place they draw it tighter in another. Seneca lays the fault upon the materials which he tells us were disobedient to the artists hand, for he says there are some sluggish elements not susceptible of active and lively forms: how far this assertion unravels any thing I leave others to find out, but it certainly supposes two first principles, a blind necessity or insentient nature to furnish materials and work them up into elements, and a divine artificer whose office was only to form such combinations as they were capable of being placed in: for if he had created his own materials we may presume he would have given them qualities suitable to the purposes he intended them for. Some ascribe evil to our immersion into matter: I know we receive all our evil from the action or by the intervention of material causes, but so we do all our pleasures and satisfactions too. This only points out the channel thro' which

evil is derived to us but does not go to the fountain head: for why should we pronounce it impossible that a matter might have been created with different properties from the present, fitted for exciting pleasant perceptions but not painful? or what contradiction is there in spirits having a capacity given them of the former without any of the latter? or who can show the necessity of an immersion into matter at all? Might not spirits have been made capable of affecting one another with perceptions? or might they not, as Berkeley supposes, have received such succession of ideas as was thought proper for them by the immediate hand of God? Others attribute all the mischief in the world to the abuse of free will: if they mean a free will of indifference they ought to show there is such a power, for we have found no footsteps of it in our survey of human nature; if they mean a free will choosing upon motives, this acts always according to the state of the imagination representing distant good in fainter or equally vivid colours with present pleasure: and I believe all who admit a spiritual substance hold that there are societies of spirits in nature whose imaginations are so rectified that they never choose amiss, and tho' they hold their happiness by the tenure of their obedience are in no danger of forfeiting it.

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Now how little foundation soever there may be in fact for the doctrine of irresistible grace, can it be shown impossible in theory: for if desire, that is, the prospect of satisfaction be fixed upon the proper point, free will never fails to follow it: and a prospect depends upon the objects lying in view, which in this case are the modifications of our mental organs capable certainly of receiving any changes from the divine operation upon them, whereby our sentiments and actions may be influenced without the least impeachment or controul of our liberty. Or if reason and free will must unavoidably draw some mischiefs after them, who will presume to say that almighty power had not other faculties to bestow not attended with the like inconveniences? Nor at most can this cause account for all the evil found in the world, for the brute creation tho' incapable of misconduct have their share of it, and tho' much of their sufferings spring from the tyranny and capriciousness of man, all does not: for there are pains, and hurts, terrors and slaughters, wants and distresses among the beasts, the fowls and the insects in wild forests where the foot of man never trod nor the will of man ever interfered.

4. There are those who alledge the absurdity of creatures being equally perfect with
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their Creator, and that imperfection necessarily implies a liability to evil : but this consequence I cannot discern, for there is a manifest difference between actual pain and the absence or diminution of pleasure. A child is less perfect than a man, but the uneasinesses befalling a child arise from diseases, ill management or accidents, not from the imperfection of its organs. A creature with dull capacity, small powers and few materials of enjoyment might nevertheless be placed in a situation to exempt it from all want and trouble. The wiseman of the philosophers and glorified saint of the Christians, altho' supposed to stand above the reach of all evil, are still very imperfect in comparison with the Author of their Being : wherefore evil is not so connected with imperfection but that the one may subsist without the other. Besides, if it were otherwise one should expect to see them always accompany one another in equal proportion, but the contrary appears manifest from experience : for persons of the brightest parts and most extensive knowledge are not always the freest from troubles, and intelligent man has no less his share of them than the foolish ostrich or the stupid beetle. Nay that quick sensibility which is the groundwork of all advances towards perfection encreases the pungency of pains and vexations.

vexations. Many talk of a scale of Beings which they say must rise in a continued gradation from Nothing to the divine perfections: yet they cannot deny that there is an immense gap between the highest rank of creatures and their Creator, and why might not there have been a gap between Nothing and the bottom of the scale, so as to exclude all those degrees which necessarily contain a mixture of evil, if there be any such, which we have just now seen cause to doubt of? But neither do they show why there must be a scale of Beings nor what inconveniency would ensue upon the lowest being raised to the condition of the highest. Do they make an attribute of curiosity and imagine the Supreme Being like some great nobleman who will have animals of all kinds in his menagerie to divert himself with looking upon them? Or did it cost omnipotence more trouble to make an angel than an oyster, so that being fatigued with working up the former the latter was undertaken by way of play and recreation? Or does one take up more room in nature than the other, and after the universe was filled with Beings of the superiour order there remained space only for the inferiour classes in the interstices between them? In short it seems laying a restriction upon almighty power to imagine that things could
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not have been constituted otherwise than they are, and to conclude that because we see a scale of Beings, freewill liable to abuses, pains and troubles brought upon us by the action of matter, therefore God was under a necessity of ordering the world after this manner.

5. Sometimes we meet with persons who in handling this subject endeavour to stop our mouths with rhetoric instead of convincing us with logic, for they tell us that starting these difficulties concerning goodness is murmuring against heaven. Hath not the potter power over his clay to make one vessel to honour and another to dishonour? This comparison was very proper for the purpose it was intended to answer, namely, to silence the unreasonable clamours of such as fancied themselves injured by the dispensations of Providence, but by no means helps us forward in a sober enquiry into the nature and extent of the attribute under consideration. For the question is not what the clay has a right to expect but what we conceive it likely that a beneficent potter would do if he knew his vessels capable of enjoyment or suffering according to the mould wherein they were cast. The measure of bounty is not the rights but the wants and capacities of the subject whereon it is exercised; nor does bounty begin until justice ends, for there is none in giving

giving every one barely what is his due. Were there a man who should provide necessities and conveniences for his children, lead them into all useful accomplishments, indulge them with variety of pleasures and amusements, they ought to think themselves happy under such a parent notwithstanding he might have some humours which were troublesome to them now and then; yet another who were clear of this exception were better. So we when we weigh the blessings against the troubles of life and find how greatly the former exceed the latter, have abundant reason to be satisfied with our lot: yet when we reflect on the character of our heavenly father in whom there can be nothing of humour or illwill or grudging, the preponderancy of good does not account for the few evils scattered up and down among men because tho' we can still acknowledge him good we are apt to imagine that if these were removed he would be better. So that our want of title to better fortune than is allotted us does not help to reconcile the phenomena of nature with our notion of infinite goodness: for the difficulty springs from our idea of the Donor, not from our own merits nor from any exception to the value of his gifts.

6. Thus all that has been suggested to account for the origin of evil has proved unsatisfactory

satisfactory and it still remains an inscrutable mystery which has perplexed the thoughts of men from the days of Job down to the present times, and probably will continue to do so as long as there shall be men on earth to descant upon it. Tho' we have not an adequate idea of infinite power so as to determine in all cases what is absolutely impossible or implies a contradiction, yet we may clearly see that whatever has been done might have been omitted, and that the capacity of suffering is a property given to creatures with their being: nor can we imagine a necessity constraining God to form a world in a manner not suitable to his intention or attended with inconveniences he would wish to have removed, without derogating from his almighty power and without admitting two First Causes interfering with one another. Therefore we must needs acknowledge that God created evil as well as good and that nothing of either happens to his creatures unless by his appointment or permission: and if this seems to derogate from his goodness let us consider whether we have an adequate idea of goodness or know precisely what is belonging and what repugnant to it.

7. Goodness in ourselves is the prospect of satisfaction annexed to the welfare of others, so that we please them for the pleasure we receive

ceive ourselves in so doing or to avoid the uneasiness we should feel on omitting it. But God is compleatly happy in himself nor can his happiness receive encrease or diminution from anything befalling his creatures: wherefore his goodness is pure disinterested bounty without any return of joy or satisfaction to himself. Therefore 'tis no wonder we have imperfect notions of a quality whereof we have no experience in our own nature: for we know of no other love than inclination which prompts us to gratify it in the same manner as our other inclinations. In the next place let us examine our idea of infinite goodness taken in the abstract before we enquire whether God be good or no, and we shall find it incompatible with that of infinite power: for infinite goodness according to our apprehension requires that it should exhaust omnipotence, that it should give capacities of enjoyment and confer blessings until there were no more to be conferred; but our idea of omnipotence requires that it should be inexhaustible, that nothing should limit its operations so that it could do no more than it has done. Therefore it is much easier to conceive an imperfect creature compleatly good than a perfect Being, for if he pursues invariably all opportunities of doing good to the utmost of his power and knowledge he deserves

erves that character, and if there are any injuries sustained which he cannot redress, any distress unrelieved which he knows not of, his weakness and ignorance are a full excuse for his omission. But where there is almighty power, unlimited knowledge and perfect wisdom we can neither conceive that infinite goodness should extend to the utmost bounds of that which has no bounds, nor yet that it should stop until it can proceed no further. Since then we find our understanding incapable of comprehending infinite goodness joined with infinite power, we need not be surprized at finding our thoughts perplexed concerning them : for no other can be expected in matters above our reach, and we may presume the obscurity rises from something wrong in our ideas, not from any inconsistencies in the subjects themselves. In the last place let us remember that the attributes of God are infinite, therefore if he were not infinitely good he must have been infinitely malicious, for either in him must be pure and original independent on further views which might sometimes render one expedient and sometimes the other : but this the most melancholy imagination never yet suspected of him, for there is nobody so destitute of enjoyment or so overwhelmed with pains and distresses as not to be

be sensible that almighty power might have made his condition still worse.

8. Having thus taken off the force of those objections urged against Divine Goodness by showing that such will naturally start up upon matters whereof we cannot have a full comprehension and that greater will arise upon the contrary supposal, let us now try what clear ideas we can form of it and what evidence we can gather of its reality from our experience. And we need not go far to seek for proofs ; the very air we breathe, the food we eat, the relish we find in our enjoyments, the materials ministring them to us, the benefits and mutual solace of society, the faculties of understanding and volition, the value of life which renders it generally desirable, are so many striking marks of a beneficent disposition in the given of all these things. Even our troubles come attended with their alleviations : we have remedies and assistance in diseases, comfort in distresses, and hope lies ready as a salve for every sore, nor are there any in so forelorn a condition but may find something to thank God for if they will look about to seek it ; for he remembers mercy in judgement and gives us a glimpse of his goodness in the very seasons when he afflicts us. Epicurus, tho' disposed to find all the faults he could in the system of nature,
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yet made it one among his collection of Masterly Maxims, That pain if grievous was short, if long it was light. Nor are the brute creatures disregarded by the author of their Being: he supplies them with food for their sustenance, cloathing of hides, feathers or shells for their defence, harbouring places for their security, appetites for their preservation and entertainment, instincts for their direction: the beasts and fowls breathe his air, the fish take their pastime in his waters, the reptiles live upon his bounty, and the most contemptible insects receive their portion of enjoyment from his hand.

9. The epithet Contemptible happening to occur in the last line suggests a train of thought that may lead to something serviceable upon the present occasion; for nothing is contemptible in the eyes of God, 'tis the vanity and selfishness of man that sets him in conceit at an immense distance above other creatures and thereby renders them objects of scorn and contempt: so I run the hazard of offending the delicacy of my cotemporaries by representing almighty power and wisdom employed in providing conveniences and enjoyments for the pismire, the earth-worm and the mite, the ugly spider, the filthy maggot and the venomous adder. Nor might have succeeded with them much better had I extended

tended the observation no further than to the human species; for they concern themselves not with what happens to the indian, the savage or the hottentot, they care not for the greasy plowman or the dirty cinder wench: persons born in a cottage are thought below their notice, all who want their own knowledge and politeness deemed incapable of enjoyment. So that we lose the view of all the good done to objects we esteem unworthy of any regard, and when things happen amiss to ourselves we forget how often they have happened to our wishes. This narrowness of mind contracts our prospect of nature, and as she has some dark spots upon her face, if the eye fixes upon one of these it sees nothing but gloom and despondency; whereas were our vision a little enlarged we might perceive every dark place surrounded with a splendor of light.

10. It is observable that men commonly take their estimate of nature from themselves and their own situation: while success attends them they think they shall never meet with disappointment, and when disappointment stands across their passage they think they shall never see the lucky moment again: while in the vigour of youth, the constitution strong, the spirits alert, desires eager and materials of gratification continually at hand,

they find no fault or blemish in nature, the world is then a glorious world and pleasures expected without end, we hear of no murmurings against Providence nor mistrusts that things are not so well ordered as they should be, but they are rather apt to think God, as I may say, too good, so as to wink at their miscarriages, indulge them in their follies and suffer them to do what mischief they please to their fellow creatures without controul. But when pain, disease, disappointment or distress pinches them the tables are turned, they see not nor sympathize with the enjoyments abounding elsewhere, but take their judgement of nature from that little spot wherewith they have immediate concern, and then doubts arise concerning the condition of things: why was not this mischief prevented? where was almighty power that could not, or where was infinite goodness that would not prevent it? Thus we see that infinite goodness ebbs and flows according to the state of our minds: when we are at ease in ourselves we find no difficulty in entertaining the idea of it; when dissatisfied with our present condition nothing is harder for us to comprehend. Nor is this to be wondered at, for vexations of every kind give a melancholy cast to the mind destroying the relish of those pleasures which used to delight us before, so
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that we have nothing similar in our imagination wherewith to compare the sensations of others : for our only way of estimating other people's enjoyments is by imagining ourselves in their circumstances and reflecting on the joy we should receive thereby, but when the mind is so disposed as to care for nothing and find a relish in nothing we cannot readily conceive others wishing or caring for what would not affect us, and therefore being unable to form a clear conception of enjoyment either in ourselves or elsewhere we lose the idea of that goodness which can be apprehended only by its effects.

11. Thus we find our unfavourable suspicions of nature owing to the wrong turn or disordered condition of our imagination, when our own ill management or unlucky circumstances confine our view to the least favourable of her features : for so a man may take distaste to a fine building if he be locked up in the necessity or resolve to look upon nothing else. Therefore it behoves us to take the opportunity for forming our judgement when the mind is most in tranquillity, not ruffled by vexations nor pressed by importunate desires, when the understanding is clearest, when we can extend our view all around and consider everything impartially : and we may help ourselves not a little towards en-

larging our mind by contracting a habit of benevolence. I have already taken notice in the chapter upon that article, as one of the advantages accruing from a benevolent temper, that nothing contributes so much to open the heart, to enliven the imagination and give a cheerfull cast to the scenes around us. For what we wish well to we think well of, and if we wish well to everything we shall be attentive to the successes and pleasures that happen to everything: and by turning our observation constantly that way shall find subjects to rejoice at which the selfish and narrow spirited never know. We shall cease to measure others satisfactions by our own standard, or think nothing desirable to them which we would not choose for ourselves; but shall discern a variety of tastes adapted to the several conditions wherein men are placed and things which were irksome at first becoming pleasant by custom. We may see that children have their plays, the vulgar their amusements, coarse jokes and may-games: even folly does not exclude pleasure nor poverty banish contentment. There is as much mirth in the kitchen as the parlour and as great diversion in a country fair or a cricket-match as a card assembly or a ridotto. The cobbler whistles at his stall, the dairy maid sings while she is milking, the plow-

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man munches his mouldy crusts with as good relish as the rich man eats his dainties, for he has that best of sauces hunger to season his victuals. Labour purifies the blood, invigorates the limbs, strengthens the digestion, ensures quiet sleep and renders the body proof against changes and inclemencies of weather, all which are considerable articles in the enjoyment of life, nor can their loss be compensated by any advantages of family, fortune, learning and politeness. Nor is the lowest herd incapable of that sincerest of pleasures, the consciousness of acting right, for rectitude does not consist in extensiveness of knowledge but in doing the best according to the lights afforded; and many artificers, servants and labourers find as much satisfaction in fulfilling the duties of their station as the philosopher in his researches into nature. Nor need we stop at the human species, for the brute creation too exhibits scenes agreeable for the good natured man to look upon, he may rejoice to see the cattle sporting in the field, or hear the birds singing or chirping out their joys, to behold the swallow building nests to hatch her young, the ant laying in store of provisions for her future accommodation, the flies in a summer evening dancing together in wanton mazes, the little

pucerons in water frisking nimbly about as if delighted with their existence.

12. Whoever has a heart to enjoy such contemplations will be apt to pursue them until he has satisfied himself there is a much greater quantity of enjoyment than suffering upon earth; for pleasures spring from steady permanent causes, as the vigour of health, the due returns of appetite, and calls of nature to exercise or rest; but pains proceed from accidents which happen rarely, or diseases which are either slight or temporary. And he will entertain a favourable idea of that bounty which supplies desires and means of gratifying them to every species from imperial man down to the scarce perceptible insect. When he has filled his imagination with this idea he may draw comfort from it in his seasons of affliction and distress, for tho' he finds no pleasures within his own reach or have lost the relish of any that might be offered him, he may reflect how many thousands at that moment are dancing and singing, marrying and giving in marriage, advancing towards the accomplishment of their wishes, and pursuing all kinds of enjoyment with full gust and satisfaction: how many millions of animals are eating their food, providing for their accommodations, taking their pastimes, or ruminating in their lurking holes; and this
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consideration may alleviate his trouble. I do not mean nor expect that he should carry his benevolence to such an unattainable height as to make the joys he feels in sympathizing with the joys around him stifle the smart of every evil that can befall him : but he may gather this consolation from them, that there is an inexhaustible spring of bounty flowing incessantly upon the world, and from thence conclude that himself shall partake in due measure of the stream at some time or other, if not in his present at least in some future state of Being.

13. For the great preponderancy of good over evil in this part of the creation lying within our view manifests a beneficence in the character of the Author, which must operate likewise no less in all other parts of his work : for so we reason in matters familiar to our acquaintance. We know nothing of causes unless by their effects, nor the characters of persons unless by their deeds. We know that fire will burn because we see wood consumed by it, that water is fluid because we see it fluctuate and disperse. If a man has been used to cheat we expect he will cheat again, or if he has long behaved with honesty and truth we expect the like behaviour from him for the future. Thus our whole dependence upon the qualities of bo-

dies we daily handle and persons we daily converse with rests upon our experience: and we have or may have, if we will take pains to acquire it, the like experience of an unwearyed bounty pouring blessings all around us: so that we have as good ground of assurance that God will continue to do good as we have that fire will burn, that a stone will resist the touch, or that our bosom friend will not betray us. Were we entertained in the family of some nobleman, if we found him kind and condescending to his dependents, humane to his servants, carefull to establish salutary orders for the regulation of his household, watchfull to see that even his cattle had their proper food and conveniences, we should naturally conclude the same good management prevailed in all his other houses: we have lived some years in this family of terrestrial animals, and we may as naturally conclude that the same beneficence which provides so amply for their welfare according to their respective wants and capacities, extends to every other family of sentient Beings throughout the universe.

14. By this means we may attain as full and clear an idea of goodness as may satisfy us of a character of benevolence in the disposer of all things: but the evil we likewise experience cannot infer a defect of goodness, because

because the attributes must be perfect and infinite; nor yet an opposite character, because our clearest judgement informs us that contradictory characters cannot subsist in the same subject. Therefore we must acknowledge evil to be unaccountable, and unaccountable phenomena we never extend further than we can see of them. It is possible that what portion of evil there is in nature may be confined to the visible world and lie within the regions of matter, nor need we suppose it existent elsewhere until further reasons shall occur for the supposition. At least we may presume from the character of goodness that the quantity of good in the universe vastly exceeds that of evil, which is enough to give us an inviting prospect of our condition wherever we shall go, unless there be some favourable circumstances particularly attending ourselves which make us liable to fear the worst.

15. As to the perplexities involving our thoughts let us consider from whence they generally arise, and perhaps we shall find them not irremovable. We commonly esteem goodness to consist in a compliance with our humours, a parent that indulges us in all our desires we look upon as supremely good, and if we should happen to desire what is hurtfull still we should think his denial of it a severity. But desire ordinarily fixes upon present satisfaction

faction and seldom runs along the whole line of consequences from whence the real value of things ought to be estimated: so that we often think ourselves hardly dealt with at the very time when we are receiving good. But when the trouble is once over and we feel the benefits resulting therefrom we can acknowledge that to be goodness we once esteemed hardship: and so we should have done at first had we had a clear discernment of the distant good and an earnest desire for it; for then we should have thought nothing a hardship that lay in the way to accomplish it: so that our discontents are owing to a misapprehension occasioned by the narrowness of our views.

16. So long as things succeed currently to our wishes we entertain no doubt of divine goodness, while we have the means of gratifying our desires we find fault with none of the laws of nature, not even that of rest after labours of the day, although sleep cuts us off from above a quarter of the enjoyments we might have had could we subsist without it. A moderate pittance of happiness contents us if we have no thoughts of anything higher, nor is there a man so unreasonable as to quarrel with the Almighty for making him an imperfect creature, or to think it an impeachment of goodness that he has not the capacity and enjoyments of an angel. Since then imperfection

perfection of happiness in any degree is not repugnant to our idea of goodness let us consider whether this imperfection, although not necessarily implying a liability to evil, may not well consist with a mixture of it. For the value of existence depends upon the quantity of happiness received therein, and every evil is the same as a subtraction from that quantity: if then the good and evil compared together leave a ballance of the former which if given alone would be sufficient to denominate the creature happy and be thought a gift becoming infinite goodness to bestow, why should not both together be thought so too since they are of equal value? A salary of five hundred pounds a year chargeable with a constant land tax of four shillings in the pound is equal to four hundred without that deduction: and if a friend put you in a way of making a thousand pounds by laying out four hundred, you would think yourself as much obliged to him as if he had helped you to a clear six hundred. So if there be a profuse abundance of happiness together with a small mixture of suffering distributed throughout the universe the condition of the creatures is as valuable as if the net ballance of the former had been given alone: but this would have been thought to denominate the giver infinitely good, why then should the
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the state of the world as it is occasion any doubts to the contrary.

17. Much of our good springs out of evil, for objects exciting pleasant sensations rarely occur but tis the amusement we find in the exercises of our activity and the engagement of our pursuits that furnish us with most of the enjoyments of life, and tis the desire of delivering or guarding ourselves from something we do not like that chiefly prompts us to bestir ourselves : so that if there was no such thing as danger, want or satiety we should have little to do and life would become insipid for want of employment. Nor does our reflection upon the good we possess contribute less than the pleasures we actually feel to that complacency of mind which renders life desirable, but this reflection arises principally from the contemplation of those evils from which we are exempted : it has been constantly observed that we know not the value of blessings until we lose them and those who meet with nothing to ruffle them are scarce sensible of their happiness. For as a foil sets off a beauty, so the disappointments we have experienced or distresses we behold others labour under gives us a just estimation of our present good fortune. When we turn our thoughts to thanksgiving we generally find them run upon topics relative to some wants
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that are supplied, distresses that are relieved, dangers from which we are secured or mischiefs from which we are exempted : nor can we scarce bring our minds to thank God for the air we breathe because it is so common, or for the constant returns of spring and summer, of morning and daylight, because we never miss them ; and when we do discern the value of these things it is by reflecting on the forlorn condition we should stand in without them. A rescue from some imminent danger gives a stronger apprehension of kindness than a thousand good offices, and pleasure never comes so welcome as when preceeded by pain ; nay ease alone after delivered from trouble affords a joy that satisfies the mind without any of those amusements necessary to content us at another time : most of our vexations make us some returns of this kind and many of them perhaps greater than the uneasiness they gave us while present. The complicated machinery of our body consisting of so many tender vessels and fibres liable to a thousand disorders yet preserved many years entire and unhurt, the variety of necessaries requisite for our food, our cloathing and our accommodation yet continually supplied from innumerable quarters, fill us with a higher idea of the divine wisdom, care and beneficence than we could otherwise have entertained.

entertained. Thus want, weakness, imperfection and evil, tend to display goodness, and without them we should scarce have known what it was: so that whatever joy and solace we receive at any time in contemplating the divine goodness we owe to that mixture of evil falling within our notice.

18. Having satisfied ourselves by these and many more the like considerations which our experience may suggest, that there is a character of goodness in the Author of nature, let us now examine what we may conceive agreeable or repugnant to such character, this being our only guidance to judge of matters not falling under our immediate observation and experience: and we shall find these two inferences naturally follow from our idea of goodness. That the proportion of good must greatly surpass that of evil in the universe, and That good is given for its own sake but evil never sent unless as a means productive of some greater good. The former of these conclusions may give us a favourable prospect of nature in general, and the latter may yield us comfort in particular seasons of trouble. For we may consider evil as a tax imposed, not to feed the avarice and ambition of the great, but for the support and exigencies of the government; and though we do not always see the uses for which it is wanted, yet

yet we may rest assured of the application being in good hands and that no more is levied than will be disposed of to the advantage of the community: therefore we may look upon every payment as a purchase of something more valuable than the price that is paid for it, or as a call for money to be improved at interest upon the best security. Whoever can possess his imagination with a lively sense of suffering being a purchase, and this seems not impossible to be effected by a due and habitual reflection upon the nature of goodness, will be so far from being disturbed at the weight or sharpness or continuance of the miseries he sees among mankind, that he will regard it as an evidence of some unspeakable enjoyment lying in store which infinite goodness judges worth the purchasing at so high a price. Nor need it stagger him to reflect that suffering is sometimes inflicted for a punishment of wrong doing, for we have seen in the last volume that a righteous man will never punish unless with a view to some greater advantage accruing therefrom: so that even punishment may be looked upon in the light of a purchase. Neither can this representation of it give an encouragement to do wrong for the sake of purchasing that greater advantage, for besides that persons inclined to catch excuses for doing wrong are not likely to attain the persuasion abovementioned,

abovementioned, the purchase in case of punishment either redounds to the benefit of others, or consists in an exemption from those worse punishments which impunity would draw upon the delinquent.

19. Since then we find the estates of happiness in this sublunary kingdom subject to taxes we must take the whole together, the rents and profits together with the disbursements. Or since evil is so interwoven with good that one cannot be had without the other we must not pick out single threads but regard the whole contexture as one piece, and in this light it will appear that every dispensation is good and worthy divine bounty to bestow. As to the existence of evil and its being so interwoven into the fortunes of creatures, we can do no otherwise than refer this to some unknown attribute. For as has been observed before, the little we know of God being drawn from those few of his works lying within our cognizance, we cannot expect they should discover the whole of his nature, but there may probably be other attributes belonging to him of which we can entertain no conception. We have already found the necessity of some such in the article of omniscience: for though wisdom may discern what capacities and stations are requisite for contemplating the grand design in
view,

view, it cannot determine what particular substances shall have such or such capacities, or occupy such or such stations preferable to any others. So upon the present article we have found it repugnant to our notions to suppose either that infinite bounty could stop until there was nothing further to bestow, or yet that creatures should be raised to the perfection and ineffable happiness of their creator. Therefore we must necessarily conclude there is some other attribute to moderate between goodness and omnipotence, to set the proper limits of imperfection ascertaining how near it may approach towards perfection and what distance it must always keep therefrom, and to be the origin of evil: with all which we need not perplex our thoughts either to raise doubts or attempt discoveries concerning them, since they spring from a source whereof we can have no comprehension.

C H A P. XVII.

E Q U I T Y.

IF this shall appear a novel title it is so no otherwise than by making that a separate article which uses to be included under a more general term: Equity being a species of Justice which has always been ascribed to God in the most perfect degree. For justice is commonly divided into distributive and commutative, and though the latter epithet be not properly applicable to the proceedings of God with whom we have nothing to commute in return for the blessings received at his hands, yet neither do all our dealings with one another relate to matters of exchange or such wherein our own interests are concerned. In apportioning the cares of a parent among his children, the protection afforded by a prince to his subjects or countenance given to his servants, there are certain rules which a just man will observe, and these belong to that branch of justice usually styled the commutative, nor can we conceive the like rule of equity disregarded by him who is righteous in all his ways.

2. This attribute seems the easiest of any to our comprehension, for it is no more than a perfect impartiality inclining God to be good alike to all, and to spread his mercy over all his works. It involves us in none of those difficulties we met with before on contemplating omnipotence, omniscience and infinite goodness, which we cannot well conceive either with or without bounds. For the opportunities of success given to one man must be possible and may be afforded to another, nor can wisdom want methods of bringing about events similar to those it has already contrived, nor do we see any hindrance that whatever measure of bounty is thought proper for the creatures may be diffused equally among them. And it is agreeable to our notions of God that it should do so, for his bounty is pure, unexcited by objects, but flowing solely from himself, and we naturally expect that the same cause should produce the same effect wherever it operates, unless by reason of a difference in the subjects: but there could be no difference of one man from another in their state of non-entity, what difference lies between them was of God's making and if he has been more sparing of his favours to some we may presume he will make them amends upon another occasion. Nor can we fail of being confirmed in this

notion when we reflect what it is that makes men partial or unequal in their good offices; we perform them to those from whom we expect the like return, or in gratitude for services done us, or to gain credit and reputation in the world, or for relation or intimacy sake, or because their humours suit with our own, because we find a pleasure in their company, or have taken a favourable liking to their persons: but the more a man improves in reason and virtue the more equal we find him in his sentiments and behaviour towards those with whom he has intercourse. Thus we find the seeds of partiality in wants and weaknesses of human nature, none of which can have place in the Divine. I shall not presume to limit the authority of God or set up a claim to the like proportion of blessings that others enjoy; for we are the work of his hands and he has not only full power but lawful right to dispose of us as he pleases, to bestow a larger measure of his bounty upon one and less upon another: but the question here, as before in the case of goodness, is not what the creature has a right to expect but how our idea of the dispenser of all good things makes it likely he should deal with us. And for my part, when I consider the nature of pure unmerited love, I can see nothing that should cause it to make a difference in objects where
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those objects have not a prior intrinsic value. Therefore we may abide by our theory and conclude the love of God extended in equal measure to all who are objects of it until we shall find our theory corrected by experience.

3. But it may be thought experience does contradict our supposition by the very unequal distribution of good and evil we see prevailing among mankind: some abound in superfluities while others want even the necessaries of life, some enjoy exuberant health while others struggle continually with distempers and infirmities, some encrease knowledge without measure while others scarce know their right hand from their left. Fortune, honour, accomplishment, success and ease take up their abode with a chosen few and leave the rest of the world to labour, trouble and anxiety. But in the first place let us examine the conditions of men narrowly and we shall find them not so very unequal as may appear at first sight, for there are many unobserved joys and vexations which we do not take into account; therefore we are very bad estimators of happiness, for we judge of it by our desires which fasten upon intense pleasures and run eagerly after those things which would give us the greatest joy in the acquisition or the most pungent sorrow upon

losing them: but 'tis the continual produce of satisfaction and complacence yielded by possessing, not the first transport on obtaining that constitutes the real value of things. The poor man wishes for riches, the diseased and weak for health and vigour, the ignorant for knowledge, and such as are possessed of those advantages would think it a grievous misfortune to lose them: so that it is acknowledged by the concession of all that they are better had than gone without, nor can it be doubted that the giving of them would cause extraordinary joy in the receivers and the deprivation of them as great grief and vexation in the losers. But could we lay open the thoughts of those who have been used to either fortune without having ever known the opposite and penetrate into their sentiments and feelings, we should find that pleasures grow insipid and misfortunes light by custom, that wants encrease by success and content springs out of disappointment, that both have their joys and their vexations, their comforts and their troubles, their amusements and their dislikes, their satisfactions and their uneasinesses, perhaps in nearer proportion than can easily be imagined. At least it must be admitted that all receive some share in the bounties of heaven and pay their quota to that tax of evil imposed upon human

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man nature. Nor do salubrious or pestilential airs, vernal suns or the scorching dog star, seas or winds, make any difference between high and low, strong and weak, wise and foolish.

4. In the next place let us remember that notwithstanding we cannot with all our allowances make the lot of all men exactly equal, the spirit will remain entire after dissolution of the body, still capable of receiving good and evil, of satisfaction and uneasiness; and tho' all the channels conveying either now should be taken away, we know not what new faculties it may acquire or what materials may be provided for exercising them in the world whereto it is going: so that we can no more pronounce upon a man's lot by that small period of his existence within our inspection than we can upon his enjoyment of life by seeing him pass a single day. For what was wanting here may be made up in another state and what was redundant may be retrenched. Wherefore our experience is too imperfect to warrant our altering the theory of this attribute which is the clearest of any to our conception.

5. A little observation may show us how naturally men's reason leads them into an opinion of the Divine Equity. Such as do not much exercise their reason conceive of

God as having his favourites and his averfions, because they have fo themselves and value themselves upon it, for we form our idea of God upon the model of what we esteem most excellent in ourselves : but those who practise thought and confideration fee that an equitable temper is a commendation in a mans character and consequently ascribe it in the most eminent degree to that Being which is the fountain of perfection. Therefore the unequal distribution of good and evil upon earth has always been made an argument to prove a future state, that the account might be fet even there which was left unfettled here : and opinions have been embraced without other foundation than because they were thought necessary to reconcile the different lots of men with the perfect equity of that power by whom they are disposed. Xavier, the great apostle of the Jesuits, taking for granted that the only way to happiness lay thro' the Roman church, and yet being sensible that thousands are born and die without ever having an opportunity of being admitted into it, asserts positively that every Tartar and savage has a revelation of the Romish faith made to him in the very article of death. He could have no evidence to support this assertion, for who knows what passes in the departing soul after it has lost the use of speech by which it might
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declare what it felt to the standers by? but he had recourse to this wild imagination as the only way to salve that equity which he could not but acknowledge must deal alike favourably with all and propose the terms of happiness to every human creature. To this cause likewise we may attribute the invention of a freewill of indifference, that men may make their fortunes unequal where the favours of heaven bestowed on them were equal; as a child for whom the father has made an ample provision with the rest of his brethren may yet run himself into poverty by his own extravagance: but if the Will were constantly determined by motives it was thought the lot of every one must depend upon what motives were furnished. Since then we have the concurrence of the sober and considerate part of mankind in behalf of this doctrine of God being equitable and alike good to all his intelligent creatures, and we find men so firmly rooted in this persuasion as to practise all contrivances to bring their particular tenets to coincide with it, we need make no scruple of ranking equity among the attributes and using it as a principle whereon to build what judgement we can concerning the constitution of things unseen.

6. These are all the attributes whereof we have any distinct knowledge or conception,
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and I call them primary as being essential to the Divine Nature. Nor let it be thought an omission that I have taken no notice of Justice, Purity, Majesty and Holiness, which have always been esteemed attributes equally with those before mentioned: but I look upon these as secondary attributes not arising from contemplation of the Divine Nature considered in itself, but in conjunction with the nature of man and constitution of things in the universe; upon which I shall want to make some further observations before I can explain my thoughts concerning them. Therefore shall postpone the consideration of these secondary attributes for the present, and hope it will be left to me to choose the proper time for entering upon it according to the course wherein my reasonings shall carry me.

C H A P. XVIII.

TWO CHARACTERS IN GOD.

WE are told that no man can see God and live, by which I do not apprehend it necessary to understand that the sight of
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of him is so terrible as to destroy us, but that our faculties are incapable of a full discernment of him: so that no man can see God while he lives encumbered with this veil of flesh, nor until invested with a finer organization or enabled to see intuitively even as also he is seen. And we have found this truth exemplified upon our enquiry into the attributes: we saw clouds and difficulties gather around us and discovered a necessity of other unknown attributes whereof the understanding of man has never yet received a glimpse, to furnish objects for infinite wisdom and set the measure to infinite goodness. On the other hand we may be said to see God continually before our eyes: our own existence and that of the objects we behold lead us to the knowledge of his Being, the curious structure of our bodies, the wonderful agility and variety of ideas in our minds declare his wisdom, the blessings poured daily around us manifest his goodness, the sun that rules by day, the stars that twinkle by night, the vast expanse of heaven display his power and greatness.

2. Since then God is incomprehensible and the thought of him an unfathomable abyss where the line of reason can feel no bottom, yet at the same time an object obvious to our notice and which it is highly incumbent upon

upon us to pursue so far as our faculties can reach with clearness, let us endeavour to separate what we find clear in our conceptions of him from what is dark and mysterious. And I believe this may best be done by considering him in two capacities, as Creator, and as Governour of the world: for creation being a matter whereto we find nothing similar in our experience, we have no idea of it nor any thing belonging to it. We know that substances owe their existence and properties to an almighty power, but in what other manner they might have been created or what others might have been added to their number or whether any or what inducement there was for creating them, we know nothing of. All the difficulties before started concerning absolute impossibilities, the necessity of previous objects to serve as materials for wisdom to work upon, the limitation of goodness, and origin of evil relate to the first constitution of things, from which we had better withhold our thoughts for the further we push them the more we shall find ourselves entangled in perplexities and contradictions.

3. But the governance of the world lies nearer to our apprehension, as proceeding upon a constitution of things already established, disposing and giving motion to substances

stances according to the properties assigned them, ordering the laws of nature and directing events falling under our cognizance, and by various structures or combinations either of matter alone or in conjunction with spirit raising secondary qualities perceivable by our senses. For our own volition being determined by motives, and our actions constantly aiming at some purpose suggested either by fancy or judgement, we have no conception of a power exerted without previous objects to direct and guide it: which has given rise to the notion of a nature of things eternal and unalterable by any Will or power whatsoever. But we may escape this absurdity and bring our ideas to tally with one another by considering a Governour of the universe working upon a nature of things already assigned him and acting according to certain rules established by the Creator from everlasting. I am far from intending hereby to divide the Divine Unity or deny that it is one and the same God which erected and still governs the world: I only propose this as an imaginary division rendring the subject more suitable to our narrow faculties which may comprehend in part what they cannot compass entire. Nor do I see any hurt in imagining that to be two which we know to be in reality one, for we have observed formerly
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that our conceptions often vary from our knowledge, and may find further occasion hereafter to show that it is expedient they should do so. We conceive the Sun to run his race every day through the heavens tho' we know the fact to be otherwise, for it is more convenient to speak and think of that seemingly little orb as moving about, and the wide stretched earth with all the buildings and mountains upon it as stationary. And so I apprehend it more convenient for our imagination to conceive the world and affairs of men administered by one power limited and prescribed to by another.

4. The Creator dwells in unaccessible light where the eye of man cannot approach or sees little distinctly being dazzled by the bright effulgence. We know that he is almighty, self-existent, uncaused, without beginning and unspeakably happy, and this perhaps is all we can affirm safely concerning him: unless that to him belong those unknown attributes of which we can say nothing more than that there are such. He has established some things so firmly that their existence seems almost as necessary as his own: Time and Space, the imperfection of creatures, the relations between numbers, lines, angles and forms we cannot conceive ever to have had a beginning. His ways are
unsearchable

unsearchable and his actions past finding out, therefore it is in vain to attempt accounting for his proceedings: We see there are substances around us, but why they were created in such numbers and no more or with such particular properties and no others or in such certain stations, why our ideas are variable and the face of nature continually changing, why predictions are formed and events brought about by a long chain of second causes and not by an immediate exertion of omnipotence, why evil was intermingled among the good or in what exact proportion; of all these points we are utterly ignorant. Nor can we know any more concerning the time than the manner of creation, or determine whether the creatures may not have been co-eternal with the Creator: for tho' they be effects requiring an efficient cause to produce them yet an effect may well be eternal where the cause is so. I could easily believe the Thames to have run eternally if I could persuade myself that the springs supplying it had flowed for ever: and if there had always been a Sun there would have been no beginning of daylight. So tho' the creation depended upon a superiour power for its existence it may nevertheless have subsisted from everlasting because that power was never wanting whereon it might depend.

Nor

Nor let it be urged that the Will and good pleasure of God must set omnipotence at work before there could be any thing created: for when we reflect on the immutability of the divine nature we can no more assign limits to the determination of his Will than to the exercise of his power. Therefore it behoves us to know our own ignorance, for this is the strongest mark of such wisdom as the frailty of human nature can rise to: as it is an instance of folly to conceit oneself understanding every thing and to decide confidently upon every subject. And if we be at all sensible of our ignorance we shall be very cautious in our assertions concerning creation or the Author of it, esteeming him an object of our admiration and adoration rather than of our enquiry. Nor need we be disturbed at the want of further knowledge which could avail us nothing if we had it, for we must take things as we find them, our capacities and the qualities of other substances affecting us as assigned them nor can we expect they should be altered to please us. If we know what are proper for our uses how should we be the better for knowing why they were so constituted? If we can discern the sources of good and evil, this is enough to direct us what to pursue and what to avoid, nor could we do it more effectually

effectually were we able to trace those sources up to their original causes. Besides, when the Creator had laid the foundation of nature he rested from his works, and having once made us retained, as I may say, no longer any concern with us, but delivered us over to that Providence which governs and disposes the things already created, exercises the capacities and employs the qualities already assigned.

5. But the Governour of the Universe is a more discernible object, easier for our imagination to comprehend, cloathed with milder rays of glory, the subject of our hope and confidence as well as of our admiration. For we may behold him provident, wise, gracious and beneficent; protecting us against the confusion of Chance and hard hand of Necessity, having all nature under command so that no disturbance or disorder can intrude against his liking. To him belong those attributes of which we can form any distinct notion: omnipotence to give what motions and directions he pleases to substances, to change their situations and throw them into what combinations or associate them with what company he thinks proper: omniscience to discern at one glance the whole number of substances existent, their capacities, qualities and positions: wisdom to

know exactly what secondary qualities will arise and what effects shall be produced by the operation and concurrence of second causes, so that among all the various impulses of matter and actions of spirit nothing shall fall out contrary to his design and expectation: omnipresence that nothing may escape his notice, but every particle of corporeal or spiritual substance be directed with the same vigilance as if it wore the sole object of his attention: unwearied goodness to provide all the happiness for the creatures which their capacities can receive or the pre-established nature of things will admit, and impartial equity to allot the just proportion of good and evil among sentient creatures, so as that none may have cause to complain at being unequally or arbitrarily dealt with. These things we find no difficulty to comprehend, and these are enough to assure us that the course of nature and fortune is ordered for the best, and that we live under a government which a prudent man would choose for himself if it were left to his option.

6. To consider God as Governour of the world is the light wherein we ordinarily behold him, that which gives us the clearest conception we can entertain of him, which best answers all usefull purposes, and has this peculiar advantage that it represents his goodness,

ness, the attribute we are most interested with, in the fairest colours, as attentive to produce all the happiness possible for his creatures in the nature and constitution of things. This when well inculcated satisfies the minds of the vulgar, and would satisfy those of the speculative too if they would abstain from idle questions concerning creation and forbear to ask why things are not otherwise constituted so that more happiness might have been produced than is now possible. For if we survey so much of nature as lies within the reach of our observation and reason we shall find there is a balance of good sufficient to content any reasonable person.

C H A P. XIX.

E X T E R N A L N A T U R E.

BY Nature I understand here that disposition and order of things wherein we are likely to have any concern; so much of this as relates to ourselves in our present state of Being we must discover by observation and experience, or learn from the information of others, as being our surest guides: for

no man who is going to the East Indies recurs to theology to know what manner of living he may expect, but enquires of those who have been there before him; or if he find himself indisposed, applies to a physician, or recollects what has done him good on the like occasion formerly. But we know that this body of ours shall be dissolved, when whatever was of use or solace to it shall be no longer serviceable: though the trees continue to bear fruit we cannot taste it, though the Sun goes on to shine we cannot see it, though trades and manufactures be still carried on we can receive no benefit from them. Yet the Spirit shall remain entire with her two faculties of perceptivity and activity, but what organs, what instruments, what materials she shall have to exercise them experience informs us nothing of: for we have no ground to expect that anything wherewith we have intercourse here shall be the object of our perception or action hereafter. Nevertheless our curiosity and concern for the future naturally incline us to look forward, but we find nothing affording any glimpse of light unless in the character of that power which disposes of things visible and invisible: therefore we must content ourselves with such judgement as we can form from thence of our future condition and expectations.

2. And this leads us to the consideration of final causes which the most judicious persons have always taken into account and made the principal foundation in forming their opinions concerning things invifible : for if at any time we can discover what are the views of our Almighty Governour we may reft affured he wants not power nor wisdom to compafs them. Some indeed carry this argument too far, applying it to the affairs of this world and inferring what is or fhall be done from what they imagine fhould be done. Thus the Papifts prove an infallible judge of controverfies upon earth becaufe they conceive it neceffary there fhould be one : and many good people expect deliverance from all diftreffes and injuries or that in wars and contentions the better caufe will always prevail, becaufe they apprehend it agreeable to their idea of God that things fhould be fo ordered. Our murmurings and repinings againft Providence arife from our unwarrantable expectations, which upon finding them difappointed tempt us to fufpect the ways of heaven unrighteous rather than acknowledge ourfelves miftaken in our idea of what righteoufnefs requires. But our bufinefs here is to learn, not to decide, nor can we ever depend upon what will happen folety by our idea of final caufes, nor otherwife than by remarking what has ufually

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happened

in similar cases : for our knowledge of God and his proceedings is very imperfect at best, and he has given us experience and a capacity of observation to correct our errors in theory from time to time. But with respect to the invisible world he has given us no experience nor means of observation ; if we were ever there ourselves we have utterly lost all remembrance of it, and those who are gone there before cannot return to communicate their discoveries ; but he has given us some knowledge of himself discoverable in the portion of his work we have seen, and this we may depend upon in matters whereof we have no other evidence to direct us ; for we need not doubt that he knows how to adapt his means to their intended effects and therefore may be assured the knowledge we have is sufficient to answer our purposes, until we shall find him imparting further lights. Tis true we cannot enter into the counsels of God nor discern his manner of proceeding with the same exactness and certainty as we can the qualities of bodies and characters of persons familiar to our acquaintance ; but we may reason upon them in many cases with a clearness that shall work as full assurance upon the mind to the exclusion of all doubt as even experience or demonstration : provided we keep chiefly in generals and do not enter too minutely in-

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to particulars, which we have no opportunity of knowing nor are necessary to be known by us.

3. Our own final causes lie behind each other in trains, for we desire one thing for its tendency to procure another and that other because it conduces to a third, but good or satisfaction stands at the end of every line recommending the whole to our pursuit: nor can we conceive of Providence than as aiming its dispensations at particular purposes productive of others and those again leading to others beyond: the business then is to settle with ourselves what we may reasonably suppose to be the point, answering to satisfaction in ourselves, wherein all dispensations ultimately center. For we may immediately discern that this cannot be satisfaction, such as operates upon us, for the desire of satisfaction implies a continual want of something to better our condition, to make our lives valuable and prevent our time from passing away unprofitably: but our clearest apprehensions of the Deity will not allow us to imagine him wanting anything of his creatures, or capable of accession to that happiness he enjoys from everlasting in himself, or administering the government of the world for his own amusement, to pass his time more agreeably, to provide company for his conversation or produce

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pleasures

pleasures from whence he might receive a moments entertainment. This consideration over throws the supposition of Glory which some have made a predominant attribute and ultimate end of the divine views, for they say God created and still orders all things solely for his own glory. But when we consider that a fondness for applause is a weakness in human nature, engendring pride, vanity and affectation which denote a little mind, that the sooner a man's judgement is the less solicitous we find him to display his accomplishments to others, and that honour at best is but an expedient to supply the shortness of our views and lead us into those courses which we want discernment to see the prudence of, we shall think it unbecoming to ascribe this motive to the most perfect of all Beings with whom there can be no weakness or frailty, no concern lest he should miss his due tribute of praise, no loss or disappointment if it be not regularly paid. Nor do the phenomena of nature agree with the supposition of such a principle, for of all the innumerable variety of creatures upon earth man alone is made capable of acknowledging his Maker, and among men how few are there that rise to conceptions worthy of him! far the greater part being drawn off by their occupations and necessary engagements in

in life from that attention they might else have given to his excellencies, and those few best furnished with opportunities of knowing him, how imperfect is their knowledge! perplexed with doubts and difficulties which they are forced to solve by their own incapacity and want of discernment. Nevertheless I do not deny that God is extremely jealous of his glory and does all things for that end, because he knows his glory is of the utmost consequence to his intelligent creatures: for entertaining unworthy notions of him would fill them with darkness and despair, lead them into vices and fatal errors, induce them to break those laws he has established for their happiness and introduce a general disorder and confusion: so that glory is a secondary end subservient to goodness, not an original principle but springing from the love he bears to the works of his hand.

4. Wherefore goodness remains as the ultimate principle beyond that of glory, and tho' we have supposed an unknown attribute to set the measure to goodness and restrain it from exhausting omnipotence, this belongs to the Creator whose ways are unsearchable and concerning whom we can pronounce nothing safely: but the Governor of the universe we may apprehend as infinitely good, and if there should be any higher

higher source of his actions we cannot trace it out therefore must refer to this as the first motive of all his dispensations, and if there be any thing repugnant to goodness we may be sure it will not be permitted. For we may conceive him producing all the happiness possible in the nature and constitution of things: only we must not expect his goodness should regard ourselves alone, for the nature of it requires it to flow where the greatest numbers may receive benefit by it, where there are the highest capacities for enjoying it, and where it may be attended with the fewest inconveniences. For we may observe that good and evil often generate one another, but tis the whole design in view that denominates the action: he that mingles poison with a palatable dish acts maliciously, tho' he does all in his power to enhance the present pleasure; and the surgeon who performs a cure by some painful operation acts kindly, tho' he gives a present pain. And sometimes consequences of both kinds follow each other in succession, but they must all be taken into account in order to determine the quality of the action: the physician who sweetens an emetic for a child does not act unkindly tho' he entices him thereby to drink that which will make him sick at stomach, because he intends the removal of a disorder

disorder by bringing on that sickness. So the severities that befall us or the pleasures that lead unwarily into trouble may be instances of kindness if in their whole consequences they tend to greater advantage than detriment: and that they do so we may justly conclude from the character of goodness which requires that every evil should terminate in good somewhere or other, and that if there be any which yield no fruits in this present state they should produce a plentiful crop elsewhere which will abundantly repay the trouble sustained by them here.

5. For from the unity of the Divine Nature we may justly infer that the universe is one immense kingdom governed and administered by the same legislative and executive power: and tho' this consideration alone will not hinder but that it may be divided into many distinct principalities, each separate within itself and having no communication with the rest, yet when we reflect upon the mutual dependance of things in this world and how much their interests are interwoven, we shall find reason to believe there is a like connection of interests running throughout the whole. We commonly say that all things were made for man, and so we well may provide we do not add, for man alone, but allow him likewise to be made for other creatures.

creatures. The sheep and oxen feed upon his pastures, the horse receives provender and tendence from his hands, the birds eat the grain he sows, the little mouse shares in the provisions of his table, the swallow nestles under his roof, the mastiff and spaniel earn their wages in his service, the flea and the gnat regale on his blood, the harvest-bug burrows in his flesh and his carcase breeds and nourishes the worm and the maggot. He employs his cares and reason to provide for the uses of animals subservient to his uses, and those of others he provides for in providing for his own. And there is a constant intercourse between the animal and vegetable kingdoms: man sows the corn that is the staff to support his life, plants and prunes the trees that yield him fruit, cultivates the flax that serves him for cloathing. The cattle manure the pastures that feed them, the birds carry about the seeds that grow up to supply their future occasions. It is thought the Mistletoe would be lost out of nature if it were not continually propagated from tree to tree by the thrush. And every species of living creatures has an interest in the curious structure and alimentary qualities of those plants which furnish them respectively with proper sustenance. Nor are the properties and courses of the elements, the subter-

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aneous works of nature in forming minerals, fossils, exhalations and vapours of little consequence to the things upon her surface: the blights that bring disease upon corn and trees threaten us with famine, that unknown vegetative principle promoting their growth and making the difference between one soil or one season and another fills us with plenty: the docility and capacities of brutes furnish employment and uses for man, the various passions and characters of mankind affect one another, and that long and intricate chain of events we call Chance or Fortune determines the time and condition of our birth and influences us in every part of our lives.

6. Thus nothing stands alone but each depends for its preservation and welfare upon many others around with which it stands in some respect or other connected. From hence we may gather a little more knowledge of nature than we could by a bare contemplation of the final cause: for goodness would have been equally satisfied whether the due measure of happiness had been dealt out to the creature directly by an immediate act of omnipotence, or conveyed by the intervention of second causes, or how many soever of them had intervened to operate upon one another. But since we find that God governs by a long subordination of second causes in
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this spot of nature exhibited to us for a spectacle, we may reasonably presume he takes the like method in other parts of his dominion. And we may observe that he not only employs a concurrence of causes to produce one effect, but likewise produces various effects from one and the same cause. The air that supplies us with breath assists the growth of vegetables, sustains the clouds and vapours, and purifies the earth with its continual agitations: the sea that contains the stores of rain and dew, that wafts our ships from coast to coast serves likewise as an element for the fishes: and there are seldom any events befalling among mankind which concern no more than a single person. From hence we may infer the probability of there being other uses in the works of nature besides those we discern, much more that there are uses where we cannot discern any.

7. It is this manner of proceeding by second causes that discovers the divine wisdom which could not so well be manifested by a direct exertion of omnipotence: the raining Manna from heaven might display power and a kind concern for the wants of mankind, but it would not give evidence of wisdom like the admirable contrivance in a grain of corn made to protect and nourish the tender germ fitted with little tubes for straining such earthy

earthy particles as are proper for our sustenance. If almighty power were employed at every turn there would be no room for wisdom, because nothing more would be requisite than to choose what shall be done and to do it accordingly: as a man who carries a bowl in his hand wants no skill to place it where he has a mind, but if he rolls it along the turf he ought to know exactly the inequalities of the ground and what force and direction must be given to make it rest just in the spot where he would have it lie: much more when a multitude of causes are set in motion to produce a variety of effects does it require a consummate wisdom to adjust them so nicely as that nothing may fall out contrary to intention. And the subordination of causes gives admittance to subordinate ends wherein we may sometimes discover a wisdom and contrivance in the manner of compassing them tho' we cannot trace their tendency to the ultimate end: for we may discern a curious contexture in the parts of weeds and noxious plants, of toadstools and moss, of pyrites and other useless productions of the earth, tho' we cannot see wherein they promote the benefit of any sentient creature.

8. But

8. But wisdom cannot be disjoined from goodness, for it must have some purpose to proceed upon and none other can be conceived worthy of it: it may direct to proper means and so far furnish itself with employment in supplying other means to procure them, but must receive its ultimate end from some other quality. Wherefore the most considerate of mankind have laid down as an uncontestable maxim That nature does nothing in vain, by which must be understood Unproductive of good either directly or remotely, for this would be vain with respect to the point it has ultimately in view. And Plato with some others carried this notion so far as to say that if any single event had happened otherwise than it did the whole universe would have been endamaged thereby. Whether we may run such length as to assert that every creature has some concern in every dispensation that happens there is no occasion to examine, but our idea of infinite goodness warrants us to suppose that the course of nature or fortune could not be altered in any particular without a loss of happiness somewhere or other: and this supposition will necessarily infer an intercourse of interests between the known world and the unknown. For we find nature often defeated of the purposes she seems principally to have intended, she

she forms her grains of corn in a manner fitted for producing plants of their different kinds, but how few of them ever attain that end? such as man employs in his uses make no difficulty, for we suppose her to have had the service of man in view equally with the continuation of the vegetable species: but what quantities are destroyed by blights, by mildews, by storms, or scattered about by accident, where they neither grow up to fill the reaper's hand nor yield a sustenance to any creature! She forms the eggs of birds with curious integuments one within another to foment and nourish the growing foetus: for such of them as man converts to his uses we think her pains not ill bestowed, but how many of them are addled, chilled or broken, unprofitable either for the nest or market! What multitudes of fruits of all kinds fall to the ground where they decay and perish without being of service either to man or beast! what quantities of fertile soil are annually driven down into the sea! what havock do tempests, inundations and earthquakes make as well among the works of nature as of human industry! In short there seems to be a general waste around us, a great deal of pains and contrivance thrown away, and half the provisions that are made fall short of their destined purpose. If we turn our thoughts to man him-

self we shall find that after all the wonderfull cares of nature to form children in the womb many of whom never came to the birth; of those that do one half are cut off by diseases, accident or ill management before they arrive at the use of reason. Sleep renders a considerable part of our time useless; many of our waking hours pass irksome and insipid, unprofitable to others and unpleasurable to ourselves. Ignorance and error frustrate half our undertakings; infirmities, passions and fantastic humours make us troublesome to one another. Such observations as these have tempted men to deny a Providence, and Lucretius urged it as an argument that the world could not be made in wisdom being so full of faults. But we have too many proofs of a superintending vigilance in the many provisions actually tending to our preservation, our sustenance, our accommodation and our enjoyment to be overthrown by these negative ones to the contrary, from which we may more safely infer that Providence has something else to take care of besides ourselves, therefore all cares are not thrown away which do not turn to our particular account.

9. I know that such as set themselves impartially to examine the ways of nature daily find more and more uses in things that at first appeared nugatory: but some of the phenomena

mena are of such a kind as not to be applied with any colour to the benefit of man, and many wherefrom we do receive some use are of too noble a fabric for us to claim them as our sole property. Man has no further concern with this earth than a few fathom under his feet, was then the whole solid globe beneath made only for a foundation to support the slender shell he treads upon? Do the magnetic effluvia course incessantly over land and sea only to turn here and there a mariner's compass? Are those immense bodies the fixed stars hung up for nothing but to twinkle in our eyes by night or find employment for a few astronomers? Is that prodigious effusion of light darted every way throughout the expanse of heaven for no other purpose than to enlighten and cherish two or three little planets? Does the vast profundity of space contain no more inhabitants than we see crawling about us or may conjecture abiding on other earths like ours? Surely he must have an overweening conceit of man's importance who can imagine this stupendous frame of the universe fabricated for him alone: and he must be too partial an admirer of visible nature or entertain too mean an opinion of infinite wisdom that can persuade himself things could not have been contrived better for the accommodation and happiness

of man had he been the sole object of the divine attention. To consider only the turns of the human Will which constantly follows present motives and judgements, would any body deny that man's understanding could have been more illumined and his imagination rectified so as clearly to discern and strongly to desire his truest interests, and this alone might have made a paradise upon earth without changing the face of nature.

10. Nevertheless we may so far acknowledge all things made for man as that his uses are regarded conjointly with those of other creatures, and that he has an interest in everything reaching his notice either for the sustentation of his body, the improvement of his mind, or entertainment of his thoughts. We know he has some concern with the remotest objects, the Satellites that turn the night of Jupiter into day assist him in ascertaining the longitude and measure for him the velocity of light: the mighty Sun that like a giant holds the planets and comets in their orbits enlightens him with its splendour and cherishes him with its warmth: the distant stars whose attraction probably confines other planets within their vortices direct his courses over the boundless sea and the inhospitable desert, and display the magnificence of that power which stationed them. Nor can we
suppose

suppose him forgotten in the laws respecting other worlds which are so framed as not to interfere with his interests or infringe upon that measure of good thought proper to be allotted him : for the omnipresent vigilance of our Governour overlooks nothing, and his wisdom is so consummate as to form his several systems compleat without their disturbing or breaking in upon one another.

11. But tis the narrowness of our understandings, confined to work upon such materials as are thrown in by the senses, that makes it difficult to conceive there should be creatures totally different from those falling under our observation for Providence to take care of, and therefore we expect that every provision of nature should be calculated solely for our uses. For many ages this little spot of earth was thought the only habitable part of the universe, nothing else being deemed capable of receiving a colony. Xenophanes was laughed to scorn for asserting the Moon bigger than all Peloponesus as an absurd and extravagant notion : and though later discoveries have persuaded many persons of the Planets being habitable earths like ours, yet they think no further than of peopling the surfaces of them conformably to what we see in this of our own, and even

this appears a wild imagination to common apprehensions which cannot deviate a step from the track whereto they have been accustomed. Epicurus insisted there could not be intelligence out of the human shape because he had never seen a reasonable creature of any other: and we cannot comprehend an animal without muscles, fibres, vessels and organs such as we find in those we are acquainted with. I suppose if we had never known of fishes we should have been positive that life could not subsist without air to breathe, or that there could be generation without sexes if we had never heard accounts of the Polipus. But who can set bounds to Almighty power or reckon up all the varieties that infinite wisdom can contrive, or show the impossibility of organizations dissimilar to any within our experience? Who knows what cavities may lie within the earth or what living creatures they may contain, endued with senses to us unknown, to whom the streams of magnetism may serve instead of light and those of electricity affect them as sensibly as sounds and odours do ourselves? Why should we pronounce it impossible there should be bodies formed to endure the burning Sun, to whom fire may be the natural element, whose bones and muscles are composed of fixed earth, their blood
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and juices of molten metals ? or others suited to bear the frozen regions of Saturn, having their circulation carried on by fluids more subtil than the highest rectified spirits raised by chymistry ?

How does it appear necessary that sensation must come by that long train of channels leading into one another thro' which we receive it ? The light strikes upon the corneous tunicle of the eye, thence passes on thro' the aqueous, the chrystalline, the vitreous humours till it falls upon the retina, there it excites tremulous motions which are propagated onwards in winding mazes along the optic nerves quite to the brain causing it to excite the sensation of sight. The mind receives her notices from particles penetrating or lying contiguous to her, such as their modifications are, such from time to time are her perceptions, and why may not they take various modifications from the action of external objects without that tedious process of organization employed in terrestrial animals ? Hartley and some others pretend to demonstrate that sensations and all our ideas are produced by an ether lodged in the interstices of our brain : if the case be so, when disengaged from the grosser parts of our machinery we shall have a denser ether surrounding us which might excite stronger sensations and of other kinds

than any we now experience. May there not be bodies fitted for the purposes of sensation and reflection consisting of simpler organs and lying within a narrower compass than any thing we can imagine, all eye and ear without, all memory and understanding within, small enough to permeate the densest metals with the same ease as we walk about in a grove of trees, too minute for wind to take hold of or fire to penetrate and rend asunder, which may expatiate in the boundless fields of ether and find a pabulum there to support them, or have such contexture as not to be liable to continual waste and consequently needing no recruit? Or who will undertake to demonstrate that spirits may not act and perceive without any organs at all, finding objects for one faculty to discern and subjects whereon to exercise the other in the particles passing perpetually through the sphere of their presence? or that they may not affect one another with perceptions in greater variety and vigour than we receive them from the play of our organs? not vitally united to any system of matter, but joining themselves occasionally to whatever falls within their reach, whereby, if locomotion be expedient, they may transport themselves easily from place to place; for considering the swift and incessant fluctuation
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of many subtil fluids in all directions, they need never want a conveyance to carry them whithersoever they desire.

Tis true these are all no more than possibilities, nor do we pretend to bring evidence in proof of their being fact; but the suggestion of a possibility which cannot be contradicted is enough to convince us that we have not the whole extent of almighty power in our view, nor all that nature can perform exhibited in the scenes she has displayed before us: for we find there are other ways of proceeding feasible, and if she has chosen none of them, it may be because she has still others in store whereof we cannot form the most distant imagination. But that she has other methods of supporting life and dispensing enjoyment unknown to us we may satisfy ourselves from the vast profusion of second causes she puts in act yeilding no proportionable benefit to the reptiles on this lump of dirt nor any others we can reach with our glasses or our conjectures. So that in our Father's house are many mansions, many not only in number but in variety of plan and disposition, built partly of the same kind of stone and timber but fitted up diversly according to the occasions of the respective inhabitants and serving for little else than ornament to the rest. Since
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then there are mighty works fabricated which contribute little to our uses but we must conclude from the principle of nothing made in vain that they contribute more largely to those of other creatures, this evidences a connection between the two worlds in having so many things the benefit whereof they share in common. Nor is it probable only that the several systems of Beings have partly the same materials supplying their conveniences and enjoyments, but likewise that their actions in the consequences of them mutually affect one another. It were meer guess work to go about explaining in what particulars this happens, all that we can pronounce assuredly is that we are equally incapable of discerning whether what passes among other Beings does or does not concern the affairs of men: whether as toads and adders suck up the poison from the earth, there may be some invifible animals which purify the air, or else prepare it for our respiration as milk is prepared for our nourishment by passing through the bodies of cattle; whether the emission of rays from the Sun be owing to the action of some creatures upon the surface; or whether the ministry of substances purely spiritual be employed in the four attractions and putting other laws of matter in execution.

13. But there is one respect wherein it cannot be doubted that other Beings have concern in what happens among us. Whoever admits the doctrine of final causes and nothing made in vain will scarce imagine that our two faculties of perceptivity and activity were given us only for a few years employment upon this sublunary stage to lie buried ever afterwards in eternal sleep, but that the soul upon quitting this country passes into some other whose districts are continually peopled by colonies sent from hence. Now when we reflect how much the births and deaths of human creatures depend upon the constitution of nature and disposition of affairs here, how men encrease and multiply more or less and their lives are lengthened or shortened by the condition of the air, fertility of the soil, concurrence of accidents, regulations of states, introduction or decay of arts and sciences, manners and customs, humours and fancies, virtues and vices prevailing among them, it will appear that the inhabitants of the other world are interested in all these things to have them so disposed as that our annual exports may just answer their demands. Nor is it likely they are concerned only with the numbers and times of our migrations but likewise with the qualities and characters of the new comers to be incorporated amongst them.

them. We see that nature forms none of her productions at once but brings them slowly to perfection by many gradations rising upon one another: the seed shoots up a little bud, from thence springs forth a slender twig which by degrees hardens into a stem spreading in branches and leaves until it becomes a full grown tree: the little animal comes into the world small and feeble but grows through several stages to full stature and vigour: our judgement takes forty years in maturing by the rudiments of infancy, the improvements of education converse and experience. When the plant has stricken root, the seed that before involved it rots and perishes; when the chicken is hatched, the shell and other remains of the egg crumble and moulder away: so we may presume that this gross body of ours which will decay and return to dust is an integument to preserve and form the embryo of some future animal.

We know of but one pre-existent state, I mean that of the womb, and though it be not clear, what Hartley's German friend Stahl affirms, that all the automatic motions of the heart, the arteries, the glands, the digestion were originally voluntary actions of the child, yet we must needs acknowledge that upon what passes there depend our constitution, our strength, the acuteness of our senses, the quickness

quickness of our parts, the retentiveness of our memory, much of our passions, desires and tempers: and by parity of reason we may infer that upon what befalls us here depend our constitution and all that may be called the natural endowments we shall be born with into another state. Some skip over life entirely passing directly from the womb into the other world; some are allowed but just a taste of it being snatched away in their infancy, conversant only with a few objects striking their senses, unexercised in their understandings and unpractised in the ways of men: and of those who fill up their full term of years how various are their professions, their manners of living and ways of thinking! From whence it follows that not only this life in general is preparatory to the next, but each man's particular fortune is calculated to fit him for the functions he is to fulfill hereafter, and that there is a society wherein the talents of individuals are given for the service of the whole: so that, like the Israelites gathering Manna, he who carries little away with him has no lack, and he who carries much has nothing over. Nor is it necessary the consequences of human action should be confined to himself or his future compatriots, for nature works several uses by the same spring. The sheep applies diligently to his pasture
and

and thereby fattens his flesh and lengthens his wool for the service of man: the silk-worm weaves her web for a safeguard to herself and at the same time furnishes us with materials for our cloathing and ornament: the fly injects her juices into the oak leaf to raise an apple for hatching her young and therein supplies us with ink for our correspondence and improvement. So man by his plowing, his planting, his felling, his burning, his draining, his mining, his manufacturing, may be reckoned among the second causes operating upon matter wherein the invisible world has some concern: nor are there wanting Beings to whom his joys and sorrows, successes and disappointments, frailties and miscarriages, may serve for a spectacle, an instruction and a warning.

14. In short the more we contemplate the complication of interests, of causes and effects in the visible world, the more ready we shall find ourselves to take this for a sample of the whole: and the more we reflect on the character of goodness and wisdom the more easily we shall persuade ourselves that every provision terminates in good worthy the largeness and extent of it; that whatever brings evil, or little advantage or none at all to man, redounds to the greater benefit of something else; and whatever appears
unaccountable

unaccountable either in the works of nature or courses of fortune has a purpose which it does not fail to answer. Thus we may look upon corn and cattle as made for the uses of man because he receives his uses largely from them, but the central earth which serves him only for a basis to support the ground he stands on, the vast effusion of light whereof a few rays only reach his eyes, the wide extended constellations which furnish him with nothing more than a spectacle to admire, must be designed chiefly, and those more distant stars beyond the reach of human ken solely, for the service of other creatures: and man himself, much of whose time is lost in sleep, whose actions are in great part unavailing or even hurtfull to himself, must be supposed set at work for the benefit of some invifible Beings. Yet as the brutes have their enjoyments while employed in the service of man; the ox indulges his appetite in fatning flesh for his master's table, the hen gratifies her desires in hatching and breeding up chickens for the larder: so care is taken that man shall enjoy all the accommodations and happiness consistent with the services he is destined to perform.

15. Thus

15. Thus the dispensations given to the several sets of creatures regard partly themselves and partly the interests of other species, and it may naturally be expected that those of the highest class should be preferred: for mischief falls lightest upon the dullest capacities, and the interruptions occasioned by pain makes the least loss of time to those who have the least important and delectable employments, therefore wisdom and goodness require that evil should be lodged there where it does the smallest hurt. When we consider how much of skin, bone and tunicle, how much of vital juices, flesh and parenchyma enters into the composition of all terrestrial animals, we may look upon them as upon a man encumbered with a load of cloaths, who cannot have so quick a feeling thro' them as he might upon his naked body. An organization framed all of nerve and fibre must strike stronger sensations, and unembodied spirits receiving their notices from one another must have more numerous, clearer and livelier perceptions than any we experience. So that man altho' the highest actor upon this sublunary stage, has perhaps the lowest stage to act upon in the whole theatre of the universe. From these considerations joined to our idea of infinite goodness we may reasonably conclude that evil, altho' here

here bearing an inconsiderable proportion to the good, is still more thinly scattered in other regions of nature ; and the most thinking and considerate persons from earliest antiquity have been persuaded that there are some states of Being abounding in unmingled happiness without any tincture of uneasiness or suffering.

16. We have observed before that some have ascribed the origin of evil to our immersion into matter, and to the ill use of our active powers ; but tho' these cannot be assigned to account for the first origin, they may well be the channels through which it is dispersed among sentient Beings : and the last, as has appeared upon our examination of human nature, is consequent upon the first, for tis the obstinacy of our habits and turbulency of our passions deriving their strength and violence from the state of our organs or courses of our animal circulation, that raise those inordinate desires continually leading us astray. But the inhabitants of the visible world, being more deeply immersed in matter than any others we can imagine and having many parts in their frame not subject to the action of the mind, must be supposed to receive more copiously

of the noxious stream flowing from that channel.

17. But when we consider what is probably the use of evil, namely, to excite the mind to bestir herself in avoiding it, there does not appear a necessity it should be dispersed every where to answer that purpose. Satisfaction and uneasiness are the two hinges whereon our actions turn, nor can we conceive any creatures so constituted as to proceed upon other motives: if there was no mischiefs to be feared and no loss of satisfaction to be incurred there would be little inducement to act at all, for why need a man do any thing who is in a state of complacency from whence he can never be removed? He that should have no notion of danger would run among horses and carts, into the fire and all kinds of mischief: and he that should think his pleasures could never depart from him would take no pains to secure them. But tho' the knowledge and apprehension of evil will suffice to put us in motion without feeling it ourselves, there must be real suffering somewhere to raise that apprehension. Yet a little actual evil may spread the idea of it very wide: if one man hurt himself grievously by his carelessness or obstinacy it may make thousands

sands sensible of the danger attending such a behaviour; and the mischiefs befalling one set of creatures may inspire others with a caution to guard against their approach. For the avoidance of evil having so large a share in the action of spirits may justly persuade us that those placed in the best conditioned state are liable to innumerable mischiefs, but such as they can easily escape and therefore make no diminution of their happiness: but the idea of danger prompting them to take measures for escaping it they receive from the contemplation of actual suffering among inferior Beings, not from an experience of it in themselves. Since then a few objects may suffice to furnish matter for that contemplation we may suppose them exhibited by creatures deeply immersed in matter: and that there may not want samples of evil in all the regions of the universe the Stars are stationed at immense distances which by themselves or the planets rolling round them are fitted for the reception of such creatures. The repugnance of evil to our ideas of goodness I think will warrant our extending the supposition of it no further than necessity requires, and we see this necessity does not hinder our confining it to the regions of gross matter, which will reduce it within a very

narrow compass : for if every thing corporeal within the orbit of the furthest Comet were compressed into a perfect solid I suppose it would not form a mass bigger than the body of the Sun, then the proportion this bears to the whole solar vortex will exceed the proportion of evil in nature to good, because even embodied creatures have their ballance of enjoyment in life. Nay we might have grounds to hope that this gross corporeal state is the only seat of evil in nature and from the moment we get rid of it we shall continue exempt from all mixture of uneasiness ; but we shall find reasons by and by to caution us against too great security, for that there are states of suffering elsewhere into which we may plunge ourselves by carelessness and ill management.

18. Nevertheless there is no reason to imagine from any thing occurring either to our observation or our thoughts but that there are more states of compleat happiness than of suffering, or those containing a mixture of both ; or else that the former are infinitely fuller stocked with inhabitants : for this idea agrees best with our notion of infinite goodness, which we must take for the foundation of our theory in matters whereof experience gives no information.

But

But what measure of evil is found necessary in nature stands confined to particular forms of Being, so that a few regions share the whole of it amongst them: nor will this appear an unequal distribution since the same inhabitants migrate from one region into another, whereby every one has an opportunity of taking his full share in the good as well as in the evil; and many glorified spirits have attained the height of happiness by passing through the vale of misery. If such Beings are totally disjoined from matter and receive their perceptions by communication from one another, we may reasonably suppose them equal in their condition and their enjoyments; for we know of no difference in the capacities and primary properties of spirits, and cannot well imagine them partial in their dealings among themselves. Hence it follows there must be one or more intermediate states to pass thro' wherein the lot of individuals is unequal: for inequalities here require the like inequalities elsewhere that every one's account may be set even at some time or other. But this consideration alone does not make it necessary that evil should extend beyond this terrestrial mansion, for the balance may be brought even as well by an

abatement of good as by actual suffering. He that has struggled here with disease, misfortune and distress may have ample amends made him in his next state by receiving a larger share of bounty than others around him, altho' the portion allotted them be not alloyed with any pain or uneasiness. For an encrease of enjoyment will repay actual suffering; and so we often judge ourselves when we choose to pass one day disagreeably for the sake of more than ordinary pleasure in the next rather than pass both in our common amusements.

19. Nor is it a contemptible argument of this terrene habitation being the lowest part of the creation that so little value appears to be set upon life by him who is the best judge of what is valuable: every one takes notice upon how slender thread it hangs, daily liable to be snapped short by a thousand accidents. Few compleat their full term of years, one half never arrive at manhood, and multitudes are denied an entrance into the world at all. We may observe nature almost as carefull to provide means of destruction as preservation: ravenous beasts, venomous animals and poisonous herbs are fitted for instruments of death; diseases, famines, wars, damps, suffocating vapours and pestilential

tilential airs sweep away by numbers; appetite urges men to pernicious excesses; many necessary occupations run them into dangers; folly leads them into fatal errors; vice plunges them into destructive courses; even virtue sometimes drives them upon hazardous enterprizes. So that life seems to be given not for the benefit of the individual but for some service done therein to the Whole: and those enjoyments poured plentifully upon it proceed from that unbounded goodness which appoints wages to every service and comforts to render the burthen of it easy; and one might be almost tempted to believe, with some of the ancient sages, that the luckiest thing could have befallen us was never to have been born, and the next lucky to have been taken away again immediately.

20. Now to sum up the whole of what has been offered in this chapter, we may gather from the perishable nature of our bodies and durable nature of our minds and little use appearing in many extensive and operose productions observable around us that there are forms of Being besides this wherewith we are invested: from the method constantly taken by nature of bringing her works to perfection slowly through several

stages, of generating one thing by the corruption of another, and the mutual dependence between the several parts of this visible world, that there is a like connection of interests running throughout the Whole: from the gross composition of our frame taking in notices only through a few very complicated channels, that we may be capable of stronger, clearer and more variety of perceptions than any we now experience: from the nature of the mind that it was designed for action, from the nature of action that evil is a necessary inducement to excite it, and from the nature of judgement which renders the idea of hurt without actual suffering a motive urging to avoid it, that a very little quantity of evil may suffice to set the spiritual world in motion. Thus far we discover what may be but not so fully as to satisfy us in the main point we want, for the quicker sensibility of a refined state may render us liable to acuter pains as well as more exalted pleasures, and the greater variety of perceptions may give room for more of the irksome as well as the agreeable kind, nor can we see enough of second causes to discern what proportion of evil they tend to produce. But when we raise our thoughts to the First Cause and contemplate the character

rafter of wisdom and goodness therein, manifested by the works of which we have familiar knowledge and experience, our possibility turns into assurance: for they will not suffer us to entertain a suspicion of evil being inflicted needlessly, or dispersed in greater quantities than the welfare and good order of the whole creation require. Therefore we may look upon the enjoyments dispensed in every state of Being as given for the sake of the members, but the troubles and uneasinesses annexed as a means conducive to the far greater benefit of some others.

21. Nor need we perplex our thoughts with enquiring whether things might not have been originally so constituted as that evil should not be necessary for the production of any good: for if every hurt yield a greater advantage elsewhere and we ourselves have an interest in whatever redounds to the good of the Whole, this may make us contented under it as long as we can retain a firm and lively persuasion of its so doing. I do not expect that this should entirely take off the smart of every violent pain or weight of every pressing uneasiness, for evil were no evil nor the good purposes intended by it answered if a remedy were constantly afforded to prevent it from hurting: but whenever

we

we have the free use of our thoughts these reflections may give us a favourable opinion of the universe whose regulations are all established in loving mercy and kindness, and a reasonable expectation of exchanging our present condition for a better; provided we do not by our own ill conduct cast ourselves upon those few inhospitable spots which are the sink of nature as draining away all the evil from the rest. But our hope and dependence rests solely upon the character of our Governour, not upon any thing we can discern in the tendency of second causes to our advantage: yet this need not disturb us, for if we receive good tis no matter of what sort or by what instruments or channels we receive it. He that should be assured of an ample supply from a wise and indulgent parent need not be anxious whether it were to come by the post or the carrier or an express messenger, whether in money or negotiable notes or marketable wares. Therefore we may content ourselves with the assurance of happiness in general, having no clue to direct us to the particulars whereof it consists. Our reflections and sensations here come to us by corporeal organs which we must expect to leave behind, and without them there can be neither eating nor drinking, marrying nor giving

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The light of nature pursued

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